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MERCHANDISE  
MANUALS

STATIONERY

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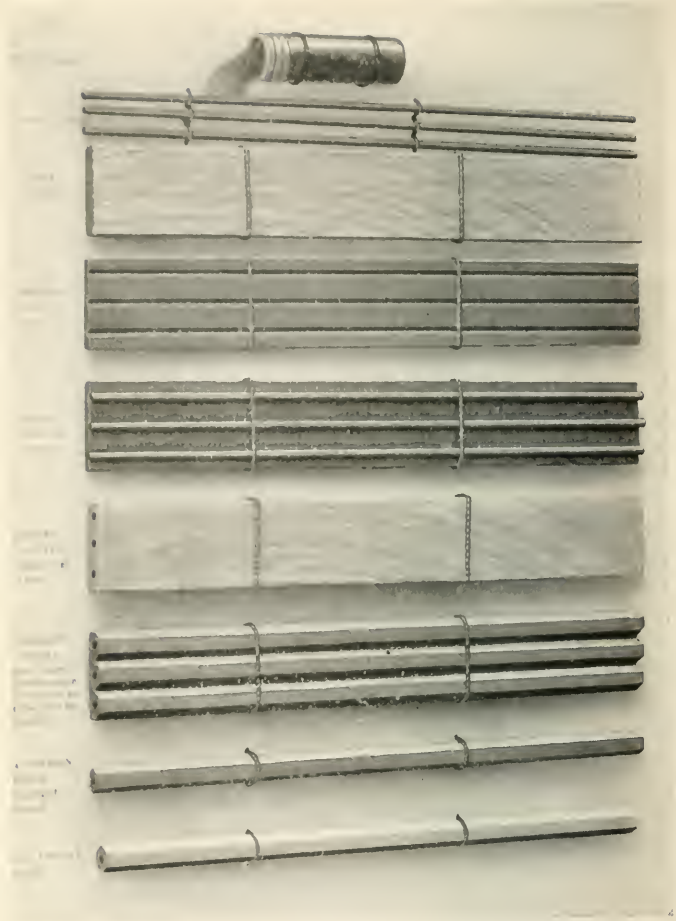
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Process of Making Pencils

# DEPARTMENT STORE MERCHANDISE MANUALS

## THE STATIONERY DEPARTMENT

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### **This Series is Dedicated**

to Mrs. Henry Ollesheimer, Miss Virginia Potter, Miss Anne Morgan, and other organizers of the Department Store Education Association, who desiring to give greater opportunity for advancement to commercial employees and believing that all business efficiency must rest upon a solid foundation of training and education gave years of enthusiastic service to the testing of this belief.



## EDITOR'S PREFACE

5463-1.20-1321  
This series of department store manuals has been prepared for the purpose of imparting definite and authentic information to that growing army of salespeople who are not satisfied to be mere counter servers—to those who realize that their vocation is one of dignity and opportunity, and that to give satisfactory service to the customer they must possess a thorough knowledge of the goods they sell, as well as a knowledge of how best to sell them.

These manuals were planned and prepared as the result of many months of teaching department store salespeople in a number of large stores in New York and other cities. Later a series of courses for teachers of department store salesmanship was introduced into the curriculum of the School of Pedagogy of New York University. This gave additional opportunity for the study of store conditions and needs from the point of view of the teacher. Thus the material in these books has been tried out with the salespeople in the store and also with those who have proven themselves to be successful teachers.

In the preparation of these manuals we have received the most cordial co-operation from experts in the various lines of merchandise and from manufacturers who have freely given their time and valuable counsel. To all of these the authors and editors of this series wish to express their grateful appreciation.

BEULAH ELFRETH KENNARD.

## AUTHOR'S PREFACE

The information contained in this manual has been gathered and arranged for the purpose of giving a better acquaintance with the quality and styles of paper sold in the Stationery Department, as well as with the many articles associated with the desk or library table. The chapter on engraving has been included to furnish the technical knowledge necessary for the intelligent handling and selling of cards, invitations, and other engraved goods.

The definite knowledge concerning the various processes of paper manufacture was obtained from prominent manufacturers of paper and from an extended study of technical works on the subject.

The author is indebted to Mr. E. H. Naylor, Secretary of the American Paper and Pulp Association, George B. Hurd and Company, The Parsons Paper Company, Mr. G. Nelson Ball of the Ball Engraving Company, and Mr. Thomas A. Isert, Secretary of The National Association of Steel and Copper Plate Engravers, and to the Technology Department of the New York Public Library, for valuable assistance rendered. For illustrations thanks are due to The United States Department of Agriculture, Crane and Company, Mr. John E. Meyer, L. E. Waterman Company, and Eberhard Faber Company.

MARY A. LEHMANN.

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# STATIONERY DEPARTMENT

## Chapter I

### INTRODUCTORY

#### Divisions of the Department

The stock of the Stationery Department comprises correspondence paper, writing materials, accessories for the writing desk or library table, and many novelties for table decorations or favors. It may be grouped in six divisions:

Paper

Engraving

Leather Goods

Metal Goods

Novelties, Gifts, and Favors

Stationery Supplies

#### Variety of Stock

Paper is the staple material in the department. It is seen in the boxes and pound packages of correspond-

ence stationery, in invitation and announcement cards, in pads and note books, score cards, albums, calendars, Christmas or other seasonal cards, and playing cards. Table decorations and favors, hand-painted and daintily colored, and tissue novelties all are made of paper.

The engraving section is a most important one, as the salesperson must be able to give authoritative advice with regard to good form and fashion in issuing invitations, announcements, etc.

Among the leather goods are many varieties of memorandum books, diaries, dance, calling, and laundry lists, and desk sets. The metal goods are equally varied, consisting of desk and library sets, ornaments, and book ends, and are made of many metals and alloys.

### **High-Grade Salesmanship Essential**

The whole department requires high-grade salesmanship as customers do not feel so competent to decide for themselves as they do in the purchase of clothing or household furnishings.

The artistic arrangement of stock, with suitable combinations for desk or table, always attracts attention to the counter and if a thorough knowledge of stock is added to good taste it becomes one of the most interesting of all departments to the salesperson.

## Chapter II

### PAPER MATERIALS

#### Knowledge of Paper Materials Essential

Nothing will inspire confidence in your ability more than a demonstration of the fact that you know your goods. A knowledge of stock includes a knowledge of the materials of which it is made. For the Stationery Department this means first a knowledge of paper.

#### Rags

The best qualities of writing and printing papers are made from cotton and linen rags. Wood pulp makes an excellent substitute but nothing is so satisfactory as rags. Rags of many kinds and conditions are gathered from various sources. They may be new linen or cotton, the cuttings left from the factories that manufacture wearing apparel; or they may be old and dirty, collected from the trash and waste of the home. Great Britain for a long time gathered her rags for the manufacture of paper from all over Europe, from South Africa, South America, and Australia.



Figure 1. Flax Fibers  
Highly Magnified

### Linen

The best linen rags are used for the highest grades of writing, bond, and ledger papers. The government paper used for bank notes is made at the Crane government mills at Dalton, Mass., of new clean linen rags which are cuttings from the textile factories. Papers made from linen are close, strong, and durable because the flax fiber from which linen is made is longer, stronger, straighter, and more even than cotton fiber. Figure 1 shows the flax fiber highly magnified.

### Cotton

Cotton rags are used for ordinary note, letter, and printing papers. Their preparation from clean rags is one of the easiest and least expensive for the paper manufacturer. Papers made from cotton are softer than those made from linen. Tender cotton rags are also used for blotting papers and filter papers.

## Wood Pulp

This is used for making newspapers and the cheaper grades of book and writing papers. Poplar and spruce wood supply the greater amount of pulp, although some twenty other species of soft wood, including silver oak, chestnut, cottonwood, yellow pine, and hemlock, are used. Because of its long fiber, poplar is particularly valuable, but spruce trees supply three-fifths of all wood pulp used. In the United States the industry centers in New England, New York, and Wisconsin, where such trees are found in abundance. It has made such rapid strides in recent years that forests are often grown for this purpose alone.

There are three methods of reducing wood to pulp suitable for paper making:

1. *Mechanical pulp* is made according to a method invented in Germany in 1844. The logs are cut, pounded, and ground to pieces, and reduced to a pulp solely by mechanical means. This is the cheapest kind of wood pulp but it makes a flimsy and perishable paper. Newspapers are often made of this substance and become discolored and brittle in a day.

2. *Soda pulp* is made by a French method invented in 1865. The wood is chipped and boiled in a strong solution of caustic soda, from which the process takes its name. It makes a soft, opaque paper.

3. *Sulphite pulp* is made according to a process in-

vented by a Philadelphia chemist. It is similar to the soda method except that the chips are boiled in lime water charged with the fumes of sulphur. The boiling in both cases separates the fibers from resin or other impurities, and loosens the fibers instead of tearing them apart as in the mechanical process. This makes a hard and fairly translucent paper.

Wood pulp paper when made by the soda and sulphite processes is less durable than that made from rags, largely because the chemicals used in its preparation weaken the fibers and cause the paper to deteriorate. When mixed with rag pulp, however, it makes a good quality of paper, although it is less firm than all-rag paper.

### Esparto

This is a tough, wiry grass that grows in Africa and Spain. It is similar to flax in structure, but stronger and more elastic and is a good substitute for rags. Paper made from it is uniform and translucent. It is especially valuable for making the featherweight papers used in bulky volumes of fiction. Esparto is sometimes mixed with rags. It was first used in the manufacture of paper by an Englishman in the middle of the nineteenth century. In thirty years it became more important than rags in the English paper industry, but after the introduction of wood pulp its popularity

steadily declined. Its chief drawback has been its expense, due to the difficulty of freeing it from the silica and resin it contains.

### **Straw**

Large quantities of straw are used in the manufacture of paper, particularly of newspaper, strawboard (pasteboard), cardboard, and wrapping paper. Wheat, oats, and barley straws are suitable. Much of the straw comes from the eastern part of the wheat belt in Ohio, Indiana, and Illinois. The severe and expensive treatment required to remove the smooth, hard coating of the straw fibers, as well as the shortness of the fibers, limits its possibilities for paper-making.

### **Other Fibers**

The fibers of manila, hemp, flax, ramie, and jute are used for wrapping paper, cardboard, etc. Hemp usually comes to the paper mill in the form of old ropes and strings.

### **Paper Waste**

This is converted by special process into cheap news paper, papier-mache, and other paper goods where length and purity of fiber are not essential.

### **Cellulose**

Cellulose is the basic material of all paper. It con-

sists of the outer walls or framework of vegetable cells and may come from the seed pod of the cotton plant, the stem of flax, or the trunks of trees. The length, strength, thickness, and shape of this fibrous material called cellulose differ according to its source but if pure it is always white, translucent, and odorless.

Cellulose is insoluble in water, alcohol, or oil, but when allowed to remain in contact with acids it disintegrates into a non-fibrous condition called hydro-cellulose. For this reason paper containing free acids left in from the process of preparation break up or disintegrate. Wood pulp papers may have this defect.

Cotton is 91 per cent pure cellulose, the purest form found in nature. The fibers of cotton and linen are similar in structure, being long and flexible, but the linen fiber is longer and broader than the cotton and its walls are stronger so that it makes a stronger and more compact paper. Linen fiber is also straight, while cotton fiber has a spiral twist which aids in the felting or matting of the pulp into paper but gives it a softer finish. Jute fiber is difficult to bleach, but makes a strong and tough paper.

Most straws are only 50 per cent cellulose. The fibers are hard, and have a polished exterior and so make a weak, translucent, and easily torn paper. The esparto fiber is short and fine and makes an opaque and soft paper if used alone. The pulp is light and there-

fore blends well with other pulps. It stands midway between the linen and cotton and the straw and wood fibers in value as a paper material.

Woods vary in the amount of cellulose which they contain, but they average about 50 per cent.

In length the fibers vary from  $\frac{1}{25}$  to  $\frac{1}{8}$  of an inch, and are usually very thin. Yellow pine has a long, soft, and flexible fiber, very similar to cotton, while other wood fibers are generally short, circular, and inflexible. Mechanical wood pulp has little felting quality and requires the addition of longer fibers, such as chemical wood pulp, to make a good paper.<sup>1</sup>

<sup>1</sup> Relative approximate lengths of paper-making fibers in millimeters:

Linen	25-30
Cotton	20-40
Hemp	20-25
Manila	4-6
Jute	2
Esparto	5
Straw	0.2

1 meter = 39.37 inches. A millimeter is  $\frac{1}{1,000}$  of meter or about  $\frac{1}{25}$  of an inch.

Relative amounts of cellulose in woods:

Poplar	62.77
Pine	57.00
Lime	53.09
Beech	45.47
Birch	55.42

## Chapter III

### THE MANUFACTURE OF PAPER PULP

#### Description of Process for Rag Paper

The ragman is still called upon for material for the finer grades of paper, even as he was before the invention of sulphite or mechanical wood pulp. The advance in the price of the higher grades of paper since the war has been due principally to the use of cellulose in war munitions, and the shortage of rags is so great that the government has asked people to save their cotton and linen rags.

We may consider the process of making paper from rags as representative and descriptive of the method used for all materials.

#### Dusting

The first step is the dusting of the bales of rags gathered from all parts of the world, which are bought by the pound. The rags are put into a huge machine which frees them from much of their dust and filth before going to the sorting room. If they have come from questionable sources they are fumigated before being sent to the sorters.

## Sorting

Although the rags are separated according to their different qualities before going to the mills, so that the paper-maker can secure the particular grade he needs for a certain purpose, yet a second sorting takes place inside the mill, as the quality of the finished paper depends very largely upon the condition of the rags. For example, it is impossible to make a high grade linen paper if the rags are old and worn and contain more or less cotton. Therefore, the rags are carefully sorted as to material (cotton, linen, hemp, or wool), color (white or dyed), quality (new or worn), and condition (clean or dirty); the hooks and eyes, seams, etc., are removed by hand and the sorted lots are sent to the cutting rooms.

New rags do not have to be dusted or sorted.

## Cutting

In the cutting room the rags are dumped into a big machine where they are cut and chopped by revolving knives into small pieces suitable for cleaning in the rollers. For fine grades of paper the rags are often cut by hand, so that the fibers may not be torn as they are in the machine-cut rags, but machine cutting is the usual method. They come out in small shreds freed from much of the dust and dirt left after the dusting process. As they are being tossed and whirled about

in the cutting machine, the suction of air currents draws out the dust and carries it off in tubes, while ingenious devices such as magnetic brushes, placed in various positions in the machine, take out the metal and other hard matter which would lower the quality of the finished paper. Finally, the partially cleansed and cut rags are carried out of the cutting machines by an endless belt on which they may be inspected before going to the boiling and beating machines. (See Figure 2.)

### Boiling

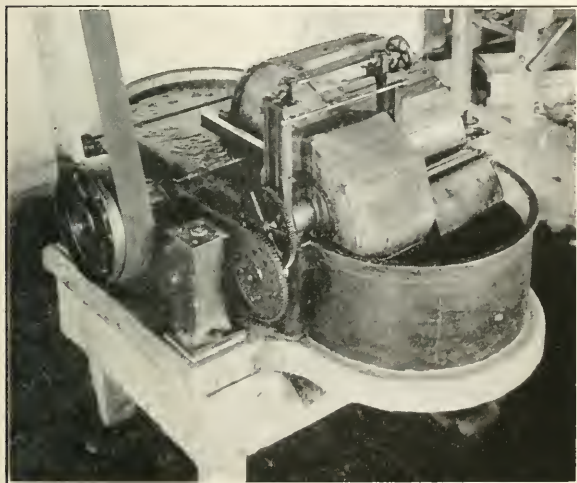
In the floor of the room, where the endless belt drops the cut rags, are openings into huge revolving boilers known as "digesters" each of which will hold five or more tons of material. Through these openings the rags are dumped into a hot solution of lime and soda in which they are boiled under heavy steam pressure. This severe boiling and digesting process which lasts from three to seven hours removes the coloring and glutinous matters, as well as grease, dirt, and other impurities. The rag pulp now looks like thin, dirty mush.

### Washing

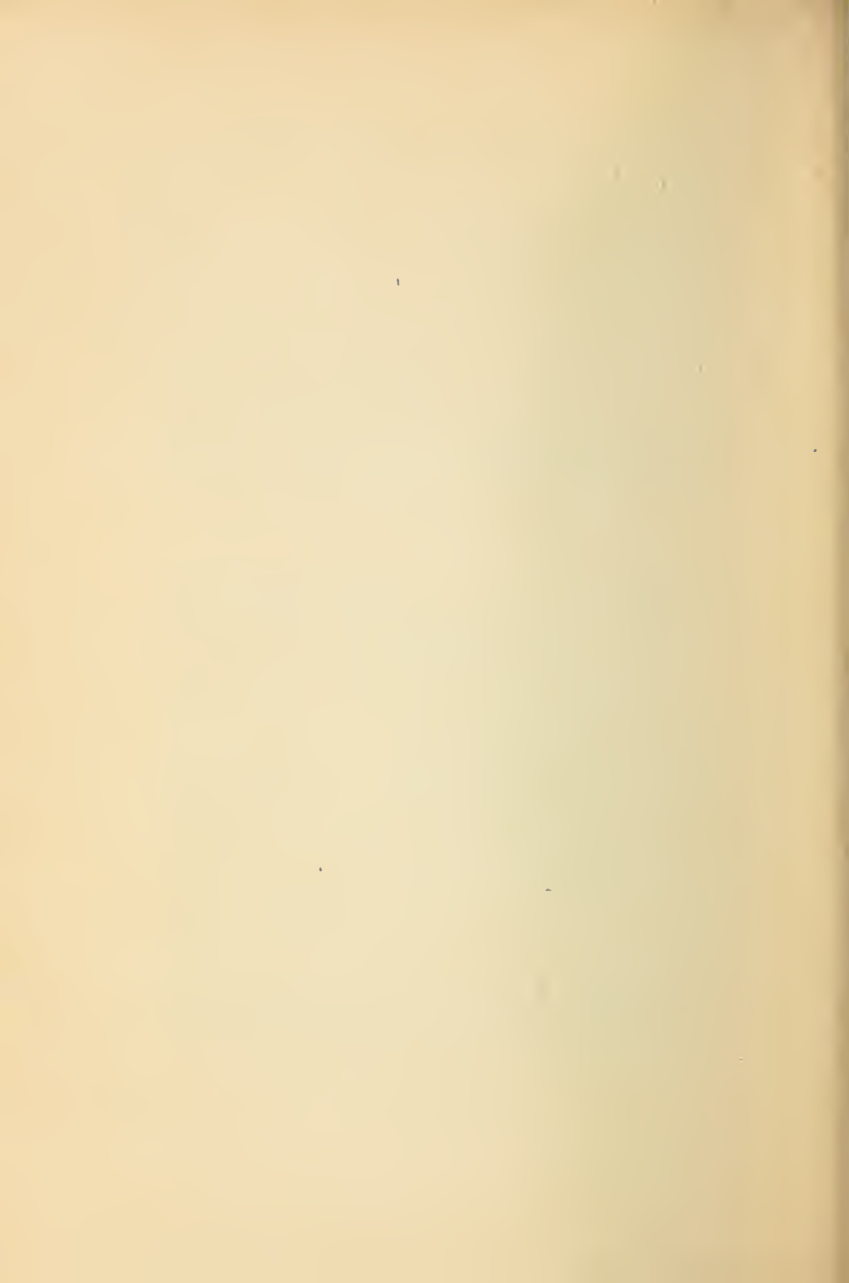
This dirty pulp must be cleansed by means of a washing process which lasts from two to four hours



Courtesy of Crane and Company  
Figure 2. Cutting Rags



Courtesy of U. S. Department of Agriculture  
Figure 3. Beating Machine



and uses a great quantity of water. It has been estimated that in manufacturing one ton of finished paper 50,000 to 70,000 gallons of water are required in the various processes.

### Water

An abundance of good, clear water is therefore obviously necessary to the paper-maker. Spring water is preferable and for this reason paper mills are located where the natural supply is abundant. It is essential to fine white paper. For the lower grades of paper it, of course, is not of such vital importance. Any impurities in the water will combine with the chemicals in the various materials and bring about a result different from that obtained with pure water. The paper manufacturer must know exactly what elements are in the water, which when perfectly pure is colorless, transparent, tasteless, and odorless.

Natural water may come from rain, rivers, or wells. Rain water may contain acids and impurities such as soot, but, being soft, is very desirable. River water is also soft but is likely to contain impurities such as iron and lime. Well water resembles spring water and is more or less hard, containing lime, earthy salts, and organic matters.

Hard water must be softened before it is suitable for use in manufacturing the best qualities of white paper.

Settling ponds or filters attached to the washing and beating engines may be employed in softening.

### **Bleaching**

It is necessary to bleach the pulp after it has been washed and this process takes place in the washers.

Early in the industry before bleaching processes were known, the color of the rags or other materials determined the color of the paper. But today, in paper making as in the textile industry, bleaching has become a highly specialized work. By means of bleaching powders, such as chloride of lime, sulphuric or chloric acid, color may be removed from the rags quickly and effectively.

Bleaching also aids in eliminating the vegetable and mineral impurities from the paper. Care must be taken, however, not to continue the process too long or the strength of the fiber will be weakened. The bleaching materials must also be well washed out before dyeing or the coloring matter will be effected.

### **Beating**

After the washing and bleaching process, the rags are put into circular or oval tub-like machines. These machines are called Hollanders because the original one was invented in Holland. As the pulp-like mass is carried about the beating machine basin in a circular motion, clean water is constantly added to complete

its purification. The original Hollander had on one side of the tub a revolving iron roll covered with knives which served in connection with a second stationary set of knives on the bottom of the tub to open up the rags as they passed.

Many modifications of this machine have been made but the principle of the Hollander remains unchanged. The action of the two sets of knives does not cut the fibers but pulls them apart as the quality of all paper is dependent upon the length, strength, and form of the fibers composing it. The process is continued for ten or twelve hours. (See Figure 3.)

### Dyeing

Even though well bleached, white papers are colored in order to tone the pulp and to correct the yellow tint. Cream papers are brightened and enriched by the addition of ultramarine and carnation. Cover papers and tissues are dyed in the piece, but writing and printing papers have the color added to the pulp during the beating process.

The principles for dyeing paper are practically the same as those for dyeing cotton and linen textile fibers. Consequently, most paper pulp must be first treated with a mordant before the coloring matter will thoroughly combine with the fiber. Alum in some cases serves this purpose.

A mordant is a chemical substance used to fix colors. The vegetable fibers, linen and cotton, because of their woody texture, particularly need this treatment, in order that they may combine with and hold the dye. Materials may be mordanted first, then dyed, or the mordant may be combined with the dye. (For a more extended treatment of dyeing see manual for "Cotton and Linen Departments.")

### Coloring Matters

The coloring matters used may be:

#### Natural dyes

1. Mineral pigments, such as "smalts" or Prussian blue.
2. Soluble colors
  - (a) Animal dyes, such as cochineal in liquid or "lakes" for pinks.
  - (b) Vegetable dyes, such as logwood for violet, lavender, and black; brazilwood for red or orange brown.

Artificial or aniline dyes made from coal tar.

### Characteristics of Different Dyes

Most papers are now colored with aniline dyes, which are reasonably stable and cheap and afford a great variety of colors. Only in the highest grades of writing paper and in a few papers that must remain

“fast” when exposed to light are the natural dyes employed. Much skill is required in mixing the coloring matter evenly with the fiber in order to insure uniform color. Blue and sometimes a small amount of red is required even for white papers in order to correct the yellow tint. Delicate tints are more expensive than deeper colors, not only because the colors themselves are more difficult to prepare, but also because a better quality of paper is required to take these tints evenly. Papers colored with pigments are likely to be darker on one side than the other as the suction in drying tends to draw the small particles of color to one side of the sheet.

The less expensive papers usually have chemical wood pulp and esparto added to the rag pulp; but when fibers are mixed in this way the paper-maker has a difficult problem, as the different fibers have different affinities for the coloring matter. This he must provide for. He must consider the use to which the paper will be put and whether it should be “fast” to light, moisture, or chemical agencies; also he must remember that some colors darken in drying and others fade.

Dyeing to match a certain shade is difficult because of the uncertain effect of coloring matter on some of the paper materials, as well as the character of the fibers and coloring matters themselves. The drying operation also affects color. Materials and properties

must be well understood. Samples of colored pulp must be compared with the moistened sample. Often the coloring matter must be added several times before the exact color of the sample is obtained.

A diffused daylight is the best light in which to judge color as under artificial light white paper appears yellow; yellow more nearly white; red more pronounced; blue and violet, greener and darker; and light blue, greener and yellowish.

### Loading or Filling

Various materials are added to the paper pulp in order to fill the pores and give the paper a smoother surface or finish, to increase its weight, and to make it more opaque. Loading is run into the beater and mixed with the pulp while both are in liquid form.

The substance most commonly used is china clay which is pure, light, and absorbent. This is used for newspapers and the cheaper grades of periodicals and books. It enables paper to take ink more readily, but if improperly strained it forms pin holes and makes the paper less capable of resisting dampness and ordinary usage.

For the finer grades the substances used are:

1. Sulphate of calcium or pearl hardening, which gives brilliancy to fine writing paper and also imparts a purity of shade.

2. Barytes or blanc fixe, a white clay used as a filler and as one of the materials in satin white.
3. Satin white, a combination of alumina and sulphate of lime used for coated papers.
4. Magnesia, which gives a peculiar soapy feeling.
5. Starch, which resists moisture and gives a high polish.

The choice of loading or filling material must be determined by the character of the pulp, the color of the paper, and the purpose for which it is designed. Defects in paper may be due to spots and specks caused by sand, dirt, knots of fiber, or lumps of the mineral matter used for filling or coloring matter.

Filling is also added to the cheaper grades of paper as an adulteration. All cheap fillers weaken the paper, as they lessen its resistance to wear. For an uncoated paper 10 per cent is the maximum amount of filler allowed.

Fillers are of benefit in coloring as they combine readily with the pigments and therefore are usually added after the dyeing but before the sizing.

### Sizing

Sizing makes the paper impervious to moisture, binds the fibers together, and gives a smooth finish which

prevents the ink from settling into the written page. Blotting papers are purposely left soft and absorbent.

In the modern paper industry the method used is "engine-sizing," a method by which the sizing is mixed with the pulp in the beater machine. The early paper maker dipped his sheet of dried pulp into a tub or barrel of "size."

The two kinds of sizing are :

1. Animal size, which is made of gelatin or glue and is used for hand-made and good writing paper.
2. Vegetable size which is made of resin or rosin (from the sap of certain fir and pine trees) boiled with carbonate of soda and is used for printing paper and also for cheap writing paper.

Alum is used to fix the size but in highly colored papers it tends to cause fading.

### **Tub-Sizing**

Some papers are "tub-sized" as well as "engine-sized." These are the higher grades of writing paper, the engine-sizing being sufficient for the ordinary book and cheaper writing papers. As tub-sizing is a separate process it, of course, adds to the expense. Such papers while still wet are passed through a tub or vat

filled with a liquid sizing made of gelatin mixed in a solution with alum.

Tub and animal-sized papers become soft with age as the gelatin is acted on by the moisture of the air, and so should be kept dry. Very heavily sized papers are also spoiled by the dry heat of steam pipes.

### **The Stuff Chest**

From the beaters the pulp is poured into a "stuff chest" where it remains from five days to two weeks. The mixture is kept in constant motion during this enriching period and becomes of an even consistency.

## Chapter IV

### FINISHING THE PAPER

#### Hand-Made Paper

The process of converting the pulp from the stuff chest into paper can be best understood by first describing the hand-made papers.

All paper was originally made by hand. After the fibers had been separated by decomposition they were beaten in a small vat and the pulp was dipped out by a "mold," a wooden frame with a fine wire screen at the bottom, and a movable frame called a "deckle" which fitted tightly into it determined the width of the paper. The arrangement of the wires in the mold determined the appearance of the paper.

Three men were required for the operation of "laying": a "vatman," a "coucher," and a "layer man." The first dipped the mold into the pulp, taking up the amount required for a sheet of the desired weight and thickness. The mold was then shaken from side to side in order to cause the fibers to felt or adhere together, and to allow the water to drain away. The edge of the paper pulp pressed down by the deckle

was rough and uneven. In cutting the paper this edge was usually removed, but if left on the paper it was called "deckle-edged." The deckle was removed and the coucher then pressed the mold against a sheet of felt to which the paper adhered and covered it with another sheet of felt. When a pile or "post" of these sheets was made it was put under heavy pressure. Then the "layerman" removed the sheets of paper from the pile of felt sheets and again put them into the press. The moist sheets were finally hung up to dry on poles in a large loft or drying room. Hand-made paper was tub-sized after the first drying process.

### **The Water Mark**

The water mark was produced by weaving a pattern on the wire screen of the mold. The layer of fibers was thinner over this pattern and made the paper more translucent.

The history of the water mark is interesting. Many varieties of modern papers took their names from these early marks. Foolscap, Crown, Post, Pott, and other names probably originated in this way. The cap and bells, crown, post, horn, and tankard were used as water marks. A ram's horn in the water mark was found in a book of accounts dated 1330. In 1649 the water mark of the finest English paper bore the royal arms, but later in the time of Charles I, a fool's cap

with bells was substituted for the king's arms. The original purpose of the marks was to add distinction. Later they were used to prevent forgery of valuable documents or notes. Today they are used largely to designate the manufacturer rather than to distinguish the paper itself. A notable example of the original use of the water mark to denote quality of paper and add distinction is Crane's Distaff Linen, which has a distaff for a mark.

### **Length of Time of Process**

The finer imported stationery is still made by the careful hand process. A very small amount is made in the United States.

By this method it takes three men a day to mold, press, and hang up to dry or finish four thousand small sheets of paper while the process from beginning to end requires about three months. Today paper can be made in twenty-four hours from a tree standing in the forest. Paper made by machinery differs from the hand-made in that it is a continuous sheet.

### **Fourdrinier Machine**

The machine used for making the continuous sheet is called the Fourdrinier because invented by a Frenchman of that name. The pulp goes first into the mixing

box of this machine, which is full of little troughs lined with long hair felt which catches any sand or dirt remaining. From these troughs the thin solution of either white or colored pulp is forced through slats upon an endless wire cloth "apron" where it spreads out in uniform thickness. The thickness of the paper is determined by the density of the solution, and its width by the regulation of rubber straps called deckle straps on each side of the wire apron.

The ragged or "deckle-edge" effect is gained in some mills by playing a stream of water along the edge of the pulp as it is stretched on the wire apron, thus crushing and thinning it and giving it a ragged appearance. The water drains out through the wire meshes and the moist pulp is next transferred to a felt blanket which passes between rollers.

The dandy roll, an important part of the Fourdrinier machine, is a wire-covered roll, whose wires are arranged in various manners to impress permanently on the soft paper all water marks, patterns, and designs. In "wove" papers the rows of wires are equally distributed, making a paper of even texture. In "laid" papers, heavier wires, placed at equal intervals cause a translucency of the paper at those places, because less pulp lodges there, giving it a lined appearance. Water marking is produced in the same way.

## Drying

From the Fourdrinier machine, the paper, which is now strong enough to bear its own weight, passes upon iron or steel drying cylinders heated by steam. They are usually from three to four feet in diameter and vary in length and weight. From twelve to fifty of these cylinders are arranged one above another, heavy papers requiring more cylinders and heavier weight than the lighter weight papers. The steam heat is sometimes supplemented by the action of fans. If the speed of the fans is too great the paper is given a hard texture. A combination of fans and steam gives good results.

Not all papers are machine-dried. The higher grades are dried by natural means (as are the hand-made papers), very slowly and evenly in a loft specially constructed for this purpose. The paper is hung on poles for several days in a temperature of from 80° to 100° F. This allows a natural shrinkage in which the fibers regain their elasticity and thus attain a maximum strength.

## Calendering or Glazing

The process which gives the smooth and polished surface to paper is known as calendering. The dull or rough paper is passed through steam-heated

rolls or cylinders revolving in contact with each other. The first process is sufficient for book and print papers and the cheaper grades of stationery. But for specially finished papers special calenders are employed, in which the rollers run closer together and with great pressure so that any degree of gloss can be put on. The more times it is passed through, the higher the effect. This process also reduces the thickness of the sheet by about 40 per cent, increases its strength, and generally improves it. Too much glazing, however, makes the paper brittle.

Calendering machines often turn out more than 500 feet of paper per minute, which is shipped in sheets often miles in length and wound upon spools three or four feet in diameter. (See Figure 4.)

### **Supercalendering and Plating**

Supercalendering is a process used to give paper an especially high or glossy surface. It is done by passing the paper through a series of 7, 9, or 11 calenders made of metal (chilled iron) and compressed cotton or paper, these calenders being arranged alternately one above the other. The paper passes through these calenders many times and takes on a smooth, high polish. Supercalendered paper is used for magazine covers. (See Figure 5.)

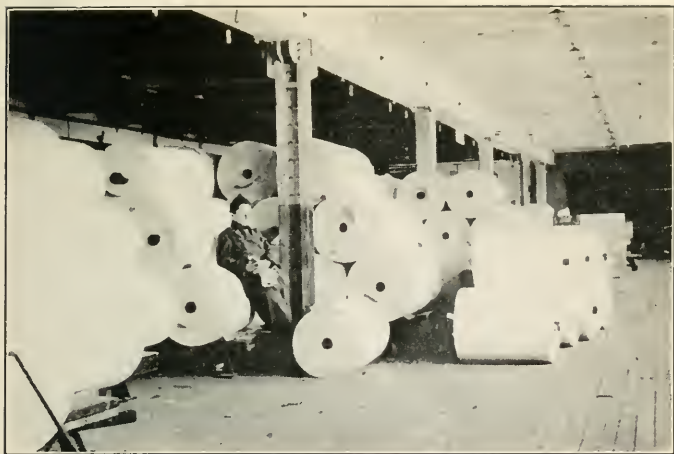
When a finish of a less glaring and more silky effect is desired, another process called plating is used. In this process the paper is cut into sheets and arranged in piles of 12 to 15 sheets with sheets of zinc between each. The piles are subjected to hydraulic pressure. This plating process is more expensive than supercalendering.

### Kinds of Finish

In general, paper has either a smooth or rough finish called glazed or unglazed. Different names are applied to distinguish the various degrees of roughness or smoothness, such as antique and vellum for the former, and kid, supercalendered, or plate for the latter. The finish, of course, depends upon the kind and amount of sizing used, and the method of pressing or calendering the sheet of paper before it is cut into the various sizes.

### Coated Paper

This is made by applying a mixture of china clay and glue to ordinary paper. A fine quality of pure white clay known as "blanc fixe" is used. The paper to be coated is passed through a vat containing the solution and then through rollers and sets of camels' hair brushes, which regulate the thickness of the coating, and is finally passed into the drying room where it is



Courtesy of U. S. Department of Agriculture  
Figure 4. Rolls of Paper



Courtesy of U. S. Department of Agriculture  
Figure 5. Supercalender



dried in a temperature of 140° F. It is calendered after drying.

Dampness will affect the quality of supercalendered and coated papers, and therefore in the stock room and elsewhere these papers should be kept dry and in a well-ventilated place.

### Glazed Paper

This may be produced by friction or by flint after a coating process which resembles that described above except that wax is added to the coating solution. In the friction glazing, the paper passes between one cotton and two steel or chilled iron rolls. One of the latter revolves at a greater speed than the other and burnishes the side of the paper. In the flint glazing, a flint stone working back and forth across the sheet brings out a brilliant and lasting polish. The flint glaze can be detected by the lines running across the sheet.

### Water Finish

In water finish paper a film of water is passed over the paper just before it is passed between the rolls of the supercalender, bringing the mineral particles to the surface and making a very level finish with a high degree of polish.

Water leaf is simply unsized paper.

### Novelty Finishes

Many pretty and pleasing effects are made by combinations of the various colors and finishes on a hard paper. Imitations of the weaves of fabrics as batiste, organdy, madras, and grosgrain, are called "fabric finishes." Popular imitations of leathers are the chamois and angora finishes. Among other striking novelties are the Grecian antique which has a coarse, rough surface; egg shell which has a fine rough surface resembling an egg shell; alligator, brown with the stripings of the alligator leather; birch bark, a thin, silky, light brown paper with flecks of deeper brown; and the Scotch granite, a gray, with loose fibers washed through it resembling granite.

## Chapter V

### MAKING PAPER INTO STATIONERY

#### Cutting

The dried paper ruled off in feet, inches, and fractions is finally placed by a sliding gauge in the flat on the bed plate of a cutting machine fitted with revolving knives that can be set to any size. The paper is held firmly in position by a clamp. Fine and highly calendered papers must be held very firmly and cut by sharp knives with great accuracy as a slight movement out of place will ruin the sheet. The machine sometimes cuts through 200 sheets at one time.

The cut paper is then sorted, laid in systematic piles, counted and divided into quires, reams, and bundles, and packed for storage and shipping. As paper is generally purchased by weight, the various weights are often designated by the size of paper, as for example, "size in inches 18 x 23, weight 28 lbs., sheets in ream 480." The quantities are:

- 24 sheets make a quire.
- 20 quires make a ream.
- 2 reams make a bundle.

The English ream has varied from 472 to 516 sheets. The French ream (1908) is 500 sheets unless otherwise specified. The American Paper Manufacturers' Association has fixed 500 sheets as the standard ream for stationery and 480 sheets for tissue paper.

The manufacturers of writing paper send out their product in large flat sheets to be cut into the required sizes and made up in stationery form by the papeterie manufacturers or makers of fine stationery. A list of these manufacturers is given at the end of the book. Only a few firms who manufacture paper complete the process.

Paper is regularly boxed by the quire, but special boxes may contain 2 or 5 quires, and fancy or holiday boxes often contain two sizes of paper and correspondence cards. The quantity is ordinarily designated.

The number of sheets in a pound of paper varies according to the weight of the paper stock, but is usually a little less than 5 quires.

Quires of writing paper are put up in four sections of 6 sheets each.

Envelopes are sold in packages of 25. When put into quire boxes they are broken into two smaller packages.

## Envelopes

Envelopes are cut to proper shape and size by heavy machinery. Large piles of paper stock are placed under the die and held in exact position by vices while the die drops, cutting out several dozen envelopes with one blow. The pile of envelopes while in the flat are removed to a table and "fanned" out, that is, spread out so that each envelope extends a little beyond the one just above it. It requires considerable skill to do this quickly and evenly. Pure gum arabic is then deftly applied by a brush to the part left bare and the envelopes set aside to dry.

Regular sized envelopes are folded by machinery, but the odd and novelty sizes are hand-folded, this again requiring accurate, neat workmanship.

## Cards

Cards are cut from sheets of cardboard by sharp, accurate machinery. By adjusting the knives of the machine, cards of any size may be cut. The high-grade cardboard used for calling cards is known as bristol-board because it was first made at Bristol, England. It is made by pressing several layers of moist paper together under heavy weights.

If the cards are to be black-bordered, they are "fanned" out and the blacking applied with a brush in the same way as the gum arabic to the envelopes. It

requires great dexterity to arrange the cards so that the borders will be even and to apply the coating properly. Mourning stationery is bordered in the same way.

### Sizes

Correspondence papers of the various manufacturers vary in size. The standard sizes for the papers of one prominent manufacturer are:

Lakewood	.....5	$\frac{3}{8} \times 6\frac{13}{16}$
Arverne	.....5	$\frac{1}{8} \times 6\frac{7}{16}$
Octavo	.....4	$\frac{7}{16} \times 6\frac{7}{8}$
Commercial	.....4	$\frac{7}{8} \times 7\frac{7}{8}$
Athena—		
(1)	.....3	$\frac{7}{8} \times 4\frac{3}{4}$
(2)	.....4	$\frac{3}{8} \times 5\frac{13}{16}$
(3)	.....5	$\frac{1}{8} \times 6\frac{7}{16}$

The standard sizes for the papers of another prominent manufacturer are:

Imperial	.....	6 x 8
Commercial	.....	5 x 8
Octavo	.....4	$\frac{1}{2} \times 7$
Gladstone	.....5	$\frac{1}{2} \times 6\frac{7}{8}$
Douglas	.....4	$\frac{7}{8} \times 6\frac{1}{2}$
Mildred	.....4	$\frac{1}{2} \times 6$
Astoria	.....4	$\frac{1}{2} \times 5\frac{1}{4}$
Victor	.....	4 x $5\frac{1}{2}$

Correspondence cards for ladies usually come in two sizes,  $5\frac{1}{2} \times 3\frac{3}{8}$ , and  $4\frac{5}{8} \times 3\frac{1}{4}$ . The larger size is the proper size for men.

It is advisable to keep a stock of correspondence cards to match the envelopes in the finer grades of stationery.

### Commercial Stationery — Bond Paper

The best commercial stationery is made of linen bond, so called because bond papers were first made for engraving and printing bonds, stocks, and other financial certificates which required a dignified, strong, firm paper. Much of what is called bond paper is made of cotton fiber.

### Sizes of Commercial Stationery

The sizes of papers in the commercial stock are:

Letter heads and typewriting papers, full size,  
 $8\frac{1}{2} \times 11$ ; half size,  $8\frac{1}{2} \times 5\frac{1}{2}$ .

Legal cap,  $8 \times 13$  and  $8\frac{1}{2} \times 13$ .

Foolscap,  $8\frac{1}{2} \times 14$ .

The sizes of commercial envelopes are:

No. $6\frac{1}{4}$	$3\frac{1}{2} \times 6$	No. 10	$4\frac{1}{8} \times 9\frac{1}{2}$
$6\frac{3}{4}$	$3\frac{5}{8} \times 6\frac{1}{2}$	11	$4\frac{1}{2} \times 10\frac{3}{8}$
7	$3\frac{3}{4} \times 6\frac{1}{4}$	14	$5 \times 11\frac{1}{2}$
9	$3\frac{7}{8} \times 8\frac{7}{8}$		

### Ledgers

The paper used in ledgers must be of good quality, smooth, thick, and durable. It is ruled according to the required purpose, by manufacturers who make a specialty of this line. The backs are of various materials. Cloth, especially a heavy canvas, is the material generally used, sometimes with leather backs and corners. Leather and leatherette backs are attractive and durable if of good quality.

### Loose-Leaf Devices

Loose-leaf devices are of several kinds, and should be chosen with reference to their use.

The *post* is capable of the greatest extension.

The *ring*, limited by the size of the ring, is suitable for most general purposes, such as school notes.

The *ledger* usually has a closed back and can be filled only to a certain extent.

The *prong* is used for railroad purposes, filing bills, etc.

The *sheet-holder* is a loose-leaf device used by expressmen.

### Filing Envelopes

Filing envelopes are of various sizes and shapes and are made chiefly from "fiber stock," a heavy paper, usually colored, and leatheroid, which is an imitation of leather in a heavy, coarse, smooth paper.

## Chapter VI

### CHARACTERISTICS OR PROPERTIES OF GOOD PAPER

#### Characteristics

Writing papers of the best quality are all rag, tub-sized, air-dried, and plate-glazed. Whether they be "wove" or "laid," this does not change the quality. Where the fibers are drawn out rather than cut, the paper is harder and more resistant to wear. When there is also a felting or matting tendency as in linen and rag paper, the texture is improved.

#### Texture

When a sheet of paper is held up to the light, it should be of uniform texture. "Wildness" or an irregular or patchy appearance is objectionable. It is desirable that all papers, except those used for tracing purposes, should be opaque rather than transparent. This even texture and solid appearance is given by proper sizing, loading, and finishing. Paper made of sulphite wood pulp, which has a tendency to produce transparency, is for this reason mixed or loaded with

mechanical wood pulp when it is to be used for writing papers. Too dense texture shows too much filling.

Well-sized paper does not allow the ink to penetrate to the other side but only deeply enough to dry in a reasonable time. Poorly sized paper may be detected by moistening a part and observing its flabby, saturated, and transparent appearance at that spot, or by writing thickly upon it and observing the time it takes for the ink to dry.

### Finish

Good writing paper is usually well glazed. Type-writing papers are best unglazed. Printing paper should not be too heavily crushed. Imperfect calendering may be detected by looking across the sheet, held on a level with the eye. If fibers stick up it is not well glazed.

### Durability

The durability of paper depends upon the fiber used, and upon the chemicals used in the process of preparation. Cotton and linen rags which are respectively 91 per cent and 90 per cent pure cellulose, and which consequently need little chemical treatment to convert them into pulp, make a paper that lasts longest. Some very durable drawing papers are manufactured from rags without the aid of chemicals. The rags are

simply boiled in plain water, beaten into pulp, and spread into sheets. The larger the amount of sizing and other chemicals used in the loading and coloring process, the more quickly paper deteriorates as the result of their chemical action. For this reason mechanical wood pulp is likely to make a perishable paper.

The polished surface given by plating, supercalendering, or water-finishing may account for deterioration. In such cases the paper is susceptible to dampness and is apt to crack. Glazing improves the appearance but not the quality.

Resin-sized papers may be affected by sunlight; gelatin-sized paper is useless in damp, hot countries. Starch- or alum-sized paper disintegrates.

The order of durability of papers made from the various fibers is as follows:

1. Rag
2. Chemical wood
3. Esparto, straw
4. Mechanical wood

### Strength

Quality is measured by the paper's resistance to rough usage, and depends principally upon the length and quality of the fibers of which it is made. Rag papers whose fibers have felting or interlacing proper-

ties are both strong and durable, while sulphite pulp, under-bleached and well-sized, is also strong and tough, though not so durable as linen and cotton because of its chemical treatment which makes it subject to the action of air and light. The Japanese papers whose fibers are separated into lengths rather than torn into small pieces are notably strong. For the same reason writing and parchment papers are stronger than blotting or filtering papers.

Machine-made papers tear irregularly in all directions. Hand-made or mold-made tear in almost a straight line either crosswise or lengthwise.

### Color

Good writing paper should have a pure, clear, uniform color and should be reasonably "fast" to light, moisture, and wear. Blotches of color or a difference of color on the two sides is most undesirable. The reason that the under surface is darker than the top is due to the shaking of the pulp in the Fourdrinier which causes the particles of color to settle at the bottom.

Fading may be due to exposure to light; or, in the packing the paper may have come in contact with boards or materials whose chemicals have changed the color.

Unevenness in color may be due to the fact that dif-

ferent fibers absorb the color in different ways, or it may be due to a lack of care in straining the dyes. The calendering brings out this effect.

### Tests for Bond Papers

The Parsons tests for quality of bond papers are simple, and easily applied. They are as follows:

1. *Test for Crackle.* Shake the paper in the hand and listen to the crackle. If it is a high-grade bond it will have a rattle and a snap. It will have a "feel" like that of crisp, new bills and a stiffness and firm structure that indicates strength.

2. *Test for Looks.* Hold the paper up to the light and note the appearance. Good bond papers are slightly mottled, but not spotty nor speckled, nor uneven; that is, they are uniform in quality. Good bond paper also does not fade.

3. *Test for Finish.* Look along the surface of a sheet. Good bond paper is smooth, firmly textured, slightly uneven, yet with no "hills and valleys" to interfere with the writing qualities. Then fold back and see how the two sides compare on the same test. Good bond papers are uniform on both sides.

4. *Test for Strength.* Tear the paper twice, once from the end and once from the side. It is important to make the two tears because the fibers tend to settle lengthwise along the wire in the Fourdrinier machine

and this makes a slight difference in the relative strength.

5. *Test for Writing.* Write on the paper with a pen and see how it slips along the surface. It should not catch or miss or tear off little fibers. A good bond paper is evenly and uniformly finished on both sides and writes as well on both. Poorly sized bonds let the ink spread and show through the paper.

6. *Test for Wearing.* Crumple up and rub the sheet between the hands as a washwoman rubs a garment in the tub. Good bond papers lose the fine surface finish and work into the shape of a piece of cloth but do not tear or show pin holes when held to the light, as a cheaply made bond will.

### Tests for Ledger Papers

The Parsons tests for ledger papers are as follows:

1. *Test for Writing.* Same as for bond. This is the most important requisite for ledger paper.

2. *Test for Erasing.* Good ledger paper must permit of quick erasures and rewriting without discoloring or spreading of the ink. On a good ledger paper one can erase on the same spot on each side of the page and write over the surface without the erasures being evident to the casual eye.

3. *Test for Wearing.* Same as for bond paper.

4. *Test for Strength.* Same as for bond paper.

5. *Test for Finish.* Look along the surface of the paper. Good ledger paper presents a smooth, firm, even finish, allowing the pen to glide smoothly over it. Both sides should be the same.

6. *Test for Looks.* Hold it up to the light. Good ledger paper should be even toned, pure in color, without spots or waxy patches or little specks. It must not fade or become yellow with age.

## Chapter VII

### SPECIALLY PREPARED PAPERS

*Blotting paper* is usually made from tender, old cotton rags. It is not loaded nor sized, but the fibers are held together by starch which does not affect the absorbent property of the paper.

*Blue print paper* is sensitive to light, and is used for copying maps and plans and for photography.

*Bond paper* is a thick, tough paper for use when a strong paper of little weight is required. It may be glazed or unglazed. It is similar to bank paper, but heavier in weight. It is used to a very large extent for business correspondence in the United States.

*Carbon paper* is tissue paper faced with carbon or lampblack mixed with oil or wax. Black carbon paper is more popular than blue or purple.

*Cardboard* is made either by placing several sheets of paper one on top of another and uniting them by a sizing material and pressure, or it may be made by a special process which produces the boards of required thickness.

*Crepe paper* is simply tissue paper bent in slight cor-

rugations resembling crepe, and may be of any color. It has become an important specialty of the Stationery Department on account of its adaptability for many decorative purposes. It is most popularly used for :

- Lamp and candle shades
- Table decorations
- Flower making
- Shelf paper
- Costumes for fancy balls

The best tissue paper used in making crepe paper is made from pure flax and is grass-bleached, no chemical being used. The fibers are longer in good tissue, thereby giving strength to the paper. Age does not affect the stock. Cheaper qualities of tissue are made of wood pulp and rags.

The first crepe or crinkled paper was made by drawing a good grade of tissue paper through the hands until it became finely ribbed. The first real crepe paper was made of the pulp. Its discovery was apparently an accident due to the fact that one of the machines was not working properly and the paper was spoiled. The attendant threw away the crinkly sheets, but a member of the firm happened through the factory and saw the discarded paper. For a long time all crepe paper was made directly from the pulp, but now it is made from tissue paper.

The modern method of manufacture of crepe uses a wood pulp tissue paper. The tissue passes through a liquid that practically reduces it to a pulp, but it still retains its sheet form. It passes over a cylinder, running at a certain speed which is determined by the type of crepe paper to be made. A long knife lifts the paper from the cylinder. The paper is pulled away at a rate of speed less than the speed of the cylinder. This crepes the paper. Next it is dried. If the paper is to be colored a single color, the dye is put into the liquid that the tissue first passes through. If printed, each color is put on by separate rollers, but all on the same machine.

*Deckle-edged paper* is paper from which the rough deckle edges have not been removed.

*Featherweight paper* has no loading and little sizing.

*Filter paper* is an all-rag paper made like blotting paper but free from chemicals.

*India paper* is thin, light, opaque but tough. It was made originally in China and Japan and is used in printing books, especially the Bible where it is desirable to avoid bulk and weight but to preserve durability. It is also used for fine engravings. India proof paper is made from the inner fibers of bamboo stems. It is extremely soft and absorbent. A paper similar to India paper is now made in this country from hemp fiber.

*Japanese papers* are of various qualities all having peculiar strength and appearance, due to the fact that the fibers are beaten out with mallets and retain their full length. This description applies only to the paper made by the Japanese.

*Linen paper* is made entirely from linen rags.

*Onion skin paper* is a translucent, high-grade writing paper with a finish described by its name.

*Papier-mache* is usually manufactured from old waste and scrap paper made over with a strong size of glue and paste and fillers such as chalk, clay, and lime. It makes a very strong, tough, slightly elastic, durable substance. It is almost unlimited in its uses, being used for boxes, trays, dolls' heads, toys, picture frames, etc., as well as molded reliefs for ceilings and walls.

*Parchment paper* is a tough, translucent, glossy, and almost impermeable paper made to resemble parchment. It is ordinary unsized paper bathed in strong sulphuric acid. Sometimes it is made from chemical wood pulp.

*Sensitized paper* is used in photography. The paper is passed through a solution which renders it sensitive to light.

*Tissue paper* is made by allowing only a small amount of pulp to flow upon the wire apron in the Fourdrinier machine during the manufacture of the web. The pulp is also well sized. A good quality is

made of 70 per cent chemical wood pulp and 30 per cent straw pulp.

*Tracing paper* is tissue paper sized with oil and varnished, or with turpentine and gum, so that it is transparent and yet of such a texture as to take marks.

*Vellum* is a thick paper resembling prepared calfskin. It is made from good quality rags which have been long beaten.

*Waxed paper* is prepared by rubbing melted beeswax or paraffin into the paper with a hot iron. This makes it impervious to moisture.

## Chapter VIII

### HISTORY OF PAPER

#### Early Substitutes for Paper

From the earliest centuries man has been compelled to find some method for keeping records of events. Oral tradition, by which information was handed down from generation to generation, had many drawbacks and other more accurate methods were sought. Some of these were the planting of trees, the erection of piles of stone, the carving of monuments and obelisks, the incising of tablets of clay, bone, ivory, metals, and wood covered with wax, and writing upon the skins of animals. When man discovered that the inner bark of trees and leaves could be used for writing purposes, the first step towards paper-making was taken.

Egyptian papyrus, probably in use as early as 670 B. C., was made from the fine layers of a reed plant stem. The layers were removed by a sharp instrument, spread on a board moistened with gummy water, and then covered with other layers of the papyrus placed crosswise. These sheets were then pressed, dried, and polished with ivory or smooth stones. The

Romans improved this process and produced different varieties of papyrus.

Parchment made from the skins of sheep and goats succeeded papyrus as a writing material. It was used for many years in England for deeds and even today is used for important legal documents.

Vellum was also similarly used. It is made from calfskin.

### **Beginning of the Manufacture of Paper**

Paper similar to our modern paper was first made by the Chinese in the second century A. D. The Arabs in 700 A. D. imitated the Chinese by making a paper from cotton, and a few years after that, linen paper was manufactured. As the methods were very crude, the industry made little progress.

The art of paper-making was not introduced into Europe until the eleventh century when the Moors began its manufacture in Spain. From Spain it spread into Italy, France, and Holland. The French and Dutch papers for a long time were the best made in Europe. Germany learned the trade from Italy, establishing a factory in 1320. By 1496 it was introduced into England, the first patent to paper-makers being granted in 1665.

The discovery of the art of printing in 1452 greatly increased the demand for paper. Another impetus to

its manufacture was given by the invention of the Hollander beating machine about 1690, and the Fourdrinier machine about 1800.

The first paper mill in the United States was established in 1690 at Germantown, Pa., by William Rittenhouse, a Dutchman. One of its owners, William Bradford, a Philadelphia printer, afterwards owned the first printing office in New York City. The paper made in this mill was made from linen rags. It is interesting to know that in the early days rags were scarce and that in 1801 Zenas Crane issued this appeal to the women of Worcester, Mass.: "Ladies save your Rags."

### Modern Industry in Europe

Germany possesses by far the largest number of mills in Europe. After Germany, come in order of output, France, Great Britain, Austria, Holland, and Italy. Nearly all European countries make some paper.

Scandinavia produces a crisp, elastic, unbleached, sulphite wood pulp known as Kraft, meaning "strength." Its strength is due to the fact that in the preparation of the pulp a slow, steady boiling keeps the fibers from becoming weakened. Kraft is much used for wrapping purposes. It is smooth and light in color.

### Asia

Japan produces a thin, strong, hand-made paper of

excellent quality known as Japanese copying paper, used for copying books. She also makes a thick, tough, and durable paper known as Japanese vellum, suitable for certificates, etc. Japan uses a great deal of paper for sacks, linings for walls of houses, etc. A \$4,000,000 paper mill fitted out with machinery from Watertown, N. Y., has recently been established in Japan which will undoubtedly be one of the chief paper-making countries of the future.

China, where paper-making originated, has no modern paper mills.

### America

The United States leads the world in paper-making, producing about one-third of all the world's supply. It also uses more paper than any other country for its large newspaper, magazine, book, wrapping, and advertising interests. Its imports of rags are for this reason decidedly large, coming by the hundreds of millions of pounds from all over the world. Besides the wood grown in the United States, vast quantities of wood pulp from Canada, Norway, and Sweden are used. High-grade papers are imported from England, Germany, and other countries of Europe, and in return news and book papers are exported. Water power is still used as the cheapest means of grinding the wood into pulp.

At least thirty-five states are interested in the paper industry. New York has the greatest output. Maine comes next, with Wisconsin and Massachusetts third and fourth, the latter ranking first in the output of writing and book papers. New York leads in the production of wood pulp, with Maine second and Wisconsin third. Massachusetts leads in the value of the output because of its nearness to forests, good water power, skilled labor, cheap and convenient transportation. She produces rag and finer writing papers, also book and ledger papers. The city of Holyoke has twenty-four mills, turning out 200 tons of paper a day, and is the greatest paper center in the world. A list of manufacturers of writing paper is given in the Appendix.

## Chapter IX

### ENGRAVING AND PRINTING

#### Orders for Engraving

Special order, or made-to-order engraving is usually in the hands of a special saleswoman, who should know the technical features of engraving so as to handle the order intelligently. The three classes of orders are:

Printing from engraved plates (cards, invitations, announcements, etc.).

Embossing (monograms, crests, addresses).

Printing from type (an imitation of engraved work, for programs, menus, etc.).

#### How Engraving Is Done

The engraver must be a very skillful workman. He cuts the design to be printed in the metal plate with a burin or graver, a small bar of pointed steel set in a wooden handle. It requires accurate work to incise the design at the right depth and also to reproduce it in inverse form.<sup>1</sup>

<sup>1</sup> The balance of this chapter is taken from *Iseri's Engraving Educator* by permission of the author.

### **Intaglio Engraving**

This is the proper and general trade term that includes all steel and copper plate and die engraving. Printing or stamping from intaglio plates differs from all other printing processes since the impression is made by the part of the plate lying below the surface.

### **Copper Plate Engraving**

This refers to all work cut or engraved in copper. The principal common uses for copper plate engraving are cards for social and business purposes and invitations for all purposes where not more than 4,000 or 5,000 impressions are to be run from the plate. Work of similar character for many other purposes is cut on copper; in fact, there is considerably more engraving on copper than upon steel.

### **Steel Plate Engraving**

This is similar in many respects to copper plate, although steel is susceptible of a much greater variety of work through the various mediums of engraving, etching, and transferring. For long runs the steel plate, because of its hardness and wearing qualities, is the only metal that should be employed. The steel plate may be used for every purpose that the copper plate is used for, and in addition for the production of bank-note work, certificates, bonds, and commercial headings.

### **Steel Die Engraving**

This is something different from steel plate engraving. Dies are cut or sunk in steel approximately one-half inch thick. Monograms, address dies, crests, business and professional headings, and heavily raised designs for all purposes are some of the familiar products of steel die engraving, or die sinking as it is also called.

### **Copper Plate Printing**

This is accomplished through covering the surface of the plate, both the engraved and blank parts, with ink. The surplus is wiped and polished off, leaving the ink in the cut lines. Then the sheet or card is laid on the plate and passed through rollers, the pressure forcing the ink to adhere to the paper. Nearly all copper plate impressions are made with black inks, copper not being very well adapted for the use of colored inks. The prints from copper plates when well executed are soft and velvety in appearance, never glossy, and sharp and clean cut, with a solid, deep color due to the mass of ink which makes the impression.

### **Steel Plate Printing**

This does not differ greatly from copper plate printing, the same general rules applying except that the hardness of the metal and the higher polish of the

plate surface give it working qualities along much broader lines than copper. Thus, all colors are workable in steel plate printing, which is not the case in copper plate printing. Very large steel plates with the subject repeated many times, like United States postage stamps, are employed in bank-note plate printing.

### **Steel Die Embossing or Stamping**

The terms stamping and embossing are both employed to designate the making of impressions from steel dies. This must not be confused with plate printing, for in printing plates the entire sheet or most of it is under pressure as it passes between rollers. Stamping or embossing from dies is a direct up and down striking movement. The pressure is very great, but it is exerted only on that portion of the stock where the die is stamped. The principle of inking and wiping a die is to some extent the same as in the older art of plate printing.

Stamping is the process used for monogram, crest, and address work on fine note papers and commercial headings. A surface die or one lightly cut produces an impression raised but slightly above the surface of the paper. A sunk die gives a highly elevated impression. As to variety of impressions, die stamping or embossing offers the widest range of any form of intaglio engraving. Water color inks, oil inks, varnish

inks, and all kinds of bronzes are workable in stamping. The high-gloss impressions are produced with varnish colors, the flat or dull effects from ink similar to those used in plate printing, and brilliant bronze work from special inks, the chief ingredient of which is either gold, silver, or other bronze powders.

### **Illumination**

This is a variation of stamping. Such impressions are partly stamped, partly hand-painted. Illuminating is the hand-painting of backgrounds that are not part of the engraving proper.

### **Care of Plates and Dies**

Plates and dies should be very carefully handled. The two things that injure them are rust and scratches.

Scratches or holes in the metal hold the ink the same as the engraving, and must be removed.

If a rust spot occurs in the engraving, its removal will either tone down the engraving or leave a hole in the plate. Moisture, or even the perspiration from the finger tips will often cause rust on the plates. In the case of copper plates, the slight discoloration often seen between the runs does no particular harm.

Steel plates and dies require the same care that the copper ones do. Steel does not scratch so easily, but it rusts very quickly. Engravers always dry the sur-

face of steel plates and dies after use, and coat them with wax or varnish to prevent rusting. This coating should not be removed by anyone except the engraver.

Plates and dies should therefore always be kept in a dry place and handled as little as possible. The best rule to follow is to leave the plate in the envelope or wrapper. When examining it, handle it by its edge.

### **Writing the Copy for the Engraver**

Engravers seldom send proofs of their work and it is not wise to make alterations on a finished plate. Engraver's copy, therefore, should be absolutely correct and clearly written. The writers of poor copy will never admit that it is not perfectly clear because it is readable to them. Close inspection will show, however, that the n's, m's, u's, and i's of many poor writers, as well as l's, h's, and k's, are so similar that only their place in the word or sentence makes it possible for other people to read it. In the case of proper names, guessing is almost sure to lead to errors for which the engraver is not responsible. The best way to avoid them is to send clear, typewritten copy; the next best is to use block letters similar to printed type.

### **Origin of Engraving**

Line engraving and plate printing were suggested by the goldsmith's work about the middle of the

fifteenth century. Some of the goldsmith's ornamentation consisted of designs cut out of the metal and then filled up with black enamel. From this originated the idea of filling incisions with a certain ink, wiping off the surface of the plate and pressing paper over it until the design was printed upon the paper.

### Imitation of Engraving

There is an imitation of both steel and copper plate engraving, made by ordinary type. The ink is heated which causes it to swell and makes an embossed surface, giving the effect of engraving.

### Printing from Type

A cheaper way of preparing cards is by type printing, which, of course, is not engraving at all. The surface of the set type is coated with ink, which is transferred to the paper or other material by pressure. It is the same process as that used in the manufacture of the daily paper. Type or steam press printing is used for programs, menus, "in memoriam" cards, etc.

Artistic printing grew out of the desire of the educated artisan to display his skill in ornamental work, with brilliant color, original design, and perfect finish.

## Chapter X

### ENGRAVING AND PRINTING (Continued)

#### Styles and Social Customs

Many customers ask the salesperson for advice as to suitable styles, sizes, colors, and tasteful decorations of paper and cards, as well as to the correct placing of addresses and monograms, particularly when the customer herself is not familiar with the prevailing styles.

Expert service of this kind demands a knowledge of appropriateness of color, line, and style, which is gained not merely by experience in selling, but by an acquaintance with certain guiding principles of art as to color, harmony, and design.

The salesperson should be familiar with the social customs of the day. She should not only have a knowledge of the principles of good taste and appropriateness, but she should also keep in touch with prevailing styles. The latter may be learned from high grade stationers. Customs will vary from time to time, but good taste is always conservative and avoids

startling and conspicuous effects. She should know the proper materials, forms and sizes for wedding and anniversary announcements.

The following rules are now in vogue as to the proper forms for visiting cards, invitations, and monograms.

### Sizes of Visiting Cards

Cards vary in size according to their users.

Men's cards are smaller than women's. The size in common use is the club card, which measures  $2\frac{5}{16} \times 1\frac{7}{16}$  inches. This card may be used when calling, or may accompany a lady's card. A larger size, measuring  $3\frac{5}{16} \times 1\frac{11}{16}$  inches, is used by members of the diplomatic corps in Washington, and in cases where an exceptionally long name prohibits the use of a smaller card. Men's cards should bear merely the name, although cards to be used when men call on each other may bear also the name of a club.

Misses' cards measure approximately  $2\frac{15}{16} \times 2\frac{1}{16}$  inches.

The matron's size is larger, measuring  $3\frac{1}{4} \times 2\frac{1}{4}$  inches, and may also bear the address. Many fashionable engravers use the same size cards for both Miss and Mrs., about  $2 \times 3$  inches.

A card bearing the name of husband and wife, which

is used for joint sending of gifts, at home cards, Christmas cards, etc., is  $3\frac{9}{16} \times 2\frac{1}{2}$  inches.

### Styles of Lettering

The style of lettering to be selected is another important consideration in visiting cards. (See Figure 6.)

Formerly, heavy, ornate styles were popular, but in recent years these have been replaced by lighter styles. For this reason Old English and Caxton are not at present fashionable, though always in good form, and Gothic and Roman block letters are used for business cards only.

Ninety per cent of all social engraving is in English script, and this style is always looked upon with favor.

Modified Roman is the most fashionable style at present.

Louis XV is a very popular style at the present time. It is a combination of two styles, the French Roman being used for all proper names, and script for the rest of the card. This combination gives a dignified, yet light and delicate appearance.

### Forms of Visiting Cards

The form in which the name is to appear is purely a personal matter. Some prefer to use the complete name, others prefer initials.

In the case of unmarried women, the eldest daugh-

A	Mrs. Reginald E. Madison
B	MR. WILLIAM H. BINGHAM
C	Mr. Gilbert Day Clinton
D	DR. LINDSAY WARING KEAN
E	MR. EDMUND EARL BUICK
F	WALTER SHELDON BREWSTER
G	Mrs. Thomas E. Childreth
H	Mrs. Howard Coates Wilson
J	Miss Hamilton
K	Mr. Thomas Harrington
L	Miss Charlotte Grace Beach
M	Mrs. George V. Howell

Figure 6. Styles of Engraving

A and B—Shaded Roman, C and D—Black Roman. E and F—Gothic.  
 G—Shaded Old English. H—Black Old English. J—Shaded French Script.  
 K, L, and M—Script.

ter may omit her given name from her card, using simply "Miss." In case an older branch of the family resides in the same locality, however, it is not considered good form for any other than the eldest daughter of the eldest branch to use this form.

If an address is to be given, the lower right-hand corner is preferred, but, when it is necessary to change the plate, it is permissible to have it appear in the lower left corner.

### **Wedding Invitations and Announcements**

Wedding invitations and the cards accompanying them must be correct in every detail. No other social form has such strict rules.

The size, shape, and finish of the paper used for invitations varies from year to year. The correct styles can always be learned from the proper authorities, the engravers. None but the finest quality of paper and the best of workmanship properly expresses the sentiment surrounding the occasion. The present style is to use a white, angora finish paper and a long, narrow form which fits an almost square envelope. The plate-marked panel is also much used.

The styles of lettering most used are Louis XV, shaded Roman, and English script.

The invitations are issued and paid for by the bride's parents, or surviving parent. In case neither

parent is living, a married brother and wife, married sister and husband, bachelor brother, the nearest relative, or guardian issues them.

Forms of invitations to church weddings and announcements may be either personal or impersonal, according to the following models:

### Personal Form of Wedding Invitation

*Mr. and Mrs. James Seymour Bennett  
request the honour of*

---

*presence at the marriage of their daughter  
Mabel Louise*

*to*

*Mr. Arthur Symonds Hancock  
on Wednesday, the ninth of June  
one thousand, nine hundred and seventeen  
at half after four o'clock  
at the Church of the Ascension  
in the City of New York*

### Impersonal Form of Wedding Invitation

*Mr. and Mrs. James Seymour Bennett  
request the honour of your  
presence at the marriage of their daughter  
Mabel Louise*

*to*

*Mr. Arthur Symonds Hancock  
on Wednesday, the ninth of June  
one thousand, nine hundred and seventeen  
at half after four o'clock  
at the Church of the Ascension  
in the City of New York*

**Wedding Announcement**

*Mr. and Mrs. James Seymour Bennett  
have the honour of  
announcing the marriage of their daughter  
Mabel Louise  
to*

*Mr. Arthur Symonds Hancock  
on Wednesday, the ninth of June  
one thousand, nine hundred and seventeen  
at half after four o'clock  
at the Church of the Ascension  
in the City of New York*

**Invitation to the Wedding Reception**

*Mr. and Mrs. James Seymour Bennett  
request the pleasure of*

---

*company on Wednesday, the ninth of June  
at five o'clock  
at Seven hundred and twenty Madison Avenue*

**Card of Admission to the Church**

*Please present this card  
at the Church of the Ascension  
Fifth Avenue at Tenth Street  
on Wednesday, the ninth of June*

**At Home Card**

*Will be at home  
on Wednesdays, after the tenth of September  
900 Sunnyside Avenue  
Newark, New Jersey*

**Customs as to Wedding Invitations**

If the guest is invited to the church ceremony only, the card of admission to the church should be enclosed, but if invited to the reception, and the guest is to call at the home, the card to the reception and the "at-home" card should be enclosed. In cases where the wedding is to take place at a country house, a card giving the departure and arrival of trains to and from the point at which the ceremony is to be held, is also sometimes enclosed.

Invitations should be issued two or three weeks before the wedding, and announcements sent immediately after the ceremony.

Invitations and announcements are always enclosed in double envelopes.

For church weddings the old English spelling "honour" is always used, and many prefer it for all occasions.

**Invitations for Other Occasions**

Other occasions for which engraved invitations are commonly issued are :

- Dinners and banquets
- Evening receptions
- Dances
- Teas
- At-homes

Fraternal and club affairs  
Public events  
Business openings and displays

## Forms

Invitations for evening affairs, such as dinners and receptions, are issued in the names of both host and hostess; those for afternoon affairs, as teas, at-homes, etc., in the name of the hostess only.

If an answer is expected, it is customary to place in the corner, "Please respond" or "The favor of an answer is requested." No acceptances are necessary for afternoon at-homes or teas.

Dinner dances require two forms of invitations, one for the dinner guests with "Dancing after ten" in the corner, and another in the form of an at-home with "Dancing after ten" in the corner for those invited for the dance only.

Those who entertain extensively often have an engraved form with blank spaces to be filled in for the various occasions.

## Sizes and Styles

The usual size for invitation cards is about 3 x 5 inches. A larger square is very popular at the present time, and a plate-marked panel is also in favor.

For bridge parties, etc., it is permissible to use a

small emblem, such as a miniature card design or monogram, on the invitation.

### Monograms

The monogram is an expression of the individuality of the person it represents, as no one else can use it. Although it may be largely influenced by fashion and fancy, there are always certain features to be kept in mind.

### Styles of Monograms

The styles usually follow very closely those in vogue for engraving upon jewelry and silverware. For several seasons the long, narrow monogram has been in favor, but the recent tendency has been toward round, oval, and diamond-shaped forms. The fact that Chinese and Japanese initials are being used so largely on signet rings has made this style popular for letter paper monograms. Conservative styles, always in good taste, are plain script monograms, and plain block initials in either Roman or Old English.

### Addresses

Many people prefer to use their address instead of a monogram as a heading for note or letter paper, and in guest rooms it is customary to supply paper bearing the address of the hostess. Sometimes street numbers are given in figures; in other cases the numbers are

written out. When three or four numbers are required, the written number is apt to be awkwardly long and figures are preferable.

### **Crests and Coats of Arms**

Crests and coats of arms are an inheritance from the days of chivalry when every knight was known by his coat of arms, a symbolic device denoting his rank and family.

The coat of arms was a figure in the shape of a shield such as the knight carried in battle. This shield was sometimes divided into four sections with small figures in each section; sometimes it had one large emblem which filled the whole space. Above the shield was a helmet with flying drapery called "mantling" and above that a wreath supporting a figure or part of a figure, such as a lion or a deer or an arm holding a sword. This upper part was called the "crest," while the shield and crest combined, either with or without the helmet, was called the coat of arms. Royal families had crowns instead of helmets, and in each case the device was usually completed with the motto of the family.

Strict rules were made regarding the use of a coat of arms or crest. Lists of all families entitled to them were compiled and in books of "Heraldry" the proper markings for all noble families were described. The

devices were beautifully embroidered on banners or clothing, were cut in castle walls and on silver plate, and were engraved on bookplates and stationery.

In democratic countries heraldry has no hereditary class to enforce its rules and some people who have no knowledge of its meaning choose crests and coats of arms according to their fancy, but, as a very large number of Americans are descended from arms-bearing families, such assumptions only lead to ridicule.

If customers bring in their own dies for stamping crests or coats of arms on paper, the saleswoman is only required to send the order to a competent engraver, observing the rules of the store in such matters, but she should not take the responsibility of giving advice regarding this kind of social usage. Not one engraver in fifty understands heraldry, which is the work of highly paid experts. To take orders for heraldic engraving one must have some knowledge of genealogy, heraldic marshaling and blazoning, and understand the rather difficult technical features of cutting such plates and dies. This is not within the province of the department store.

## Chapter XI

### LEATHER GOODS

#### Articles

Among the more or less varied articles found in the leather goods division of the Stationery Department are diaries, memorandum and other leather covered books, desk sets, writing pads, book covers, calendars, telephone pads, calling and laundry pads, stamp boxes, clock cases, score pads, etc.

The saleswoman must be familiar not only with her stock, but with the purpose of each article and its suitability to customers' needs. Each day brings in novelties which she must bring to the attention of her customers.

#### Leathers

The leather goods of the Stationery Department are manufactured chiefly from sheepskin, goatskin, calfskin, pigskin, and cowhide, though they are usually known by the tanning and finish which are given to the skin, as Levant, Russia, Morocco, parchment, and vellum. Alligator skin and seal are also used, but

much of the "seal" is an imitation made by putting an artificial grain on a cheaper leather.

### **Russia Leather**

Russia leather was originally calfskin tanned with birch bark which gave it its fragrance, being so named because the Russians first used this process. The older Russia leather was colored a deep red, but now may be brown or black. In this country the tanning is often done with chemicals, birch bark oil being added to give the odor.

### **Morocco**

Morocco was a goatskin first made in Morocco. Like Russia leather, it was vegetable-tanned and stained red, but the term is now applied to any goatskin or calfskin which resembles the Morocco finish.

### **Parchment and Vellum**

Parchment was sheepskin or goatskin prepared by steeping the skins in lime pits and then separating them. Pumice stone and chalk was used to give them the proper color and a surface suitable for writing purposes. Vellum was prepared by a similar process from calfskin which is finer than sheep or goatskins. Both parchment and vellum are now imitated in paper.

### **Levant**

Levant is a term used to designate leathers either

made in the Far East or finished in such a way as to imitate them. They are supposed to be of fine quality, soft, and durable.

### Tanning and Dressing

For the tanning and dressing of leather, see manual for "Leather Goods Department."

The natural grain and gloss of leather is brought out by the various processes of finishing, such as buffing or ironing, sueding or fluffing. An imitation grain may be put on by boarding or pressing into the moistened leather a heavy roller with the design cut into it.

### Tooling

Leather is also decorated by tooling, which may be done in any of the following ways:

1. *Incising*, by which the outlines of the design are made by an incising knife and then opened by an opener, making a flat decoration sometimes called engraved or cut leather. In carving, the design is cut much deeper than in incising, leaving a design which stands out in sufficient relief to be further ornamented. A thick, firm leather is necessary for carving.

2. *Embossing*, by which the design is outlined and raised on the surface by means of pressure from the back, making it stand out in high relief. Padding of wax, cotton, or leatherette is usually inserted. Model-

ing tools are used on the embossed design in order to make it more effective.

3. *Hammering or punching*, which is usually used for backgrounds and done by steel punches of different patterns to add richness and finish.

4. *Stamping*, by which the design is sunk into the dampened leather by an incised steel die held in a press. Stamped leather may be finished by hand to look like tooled leather.

5. *Burning*, or etching or engraving with fire, where the design is made by a platinum pointed tool, an alcohol lamp, and benzene. This is a method of decoration most effective on soft-finished leather and also on wood, paper, and ivory.

## Design

Decorative designs may be :

Natural, in which the objects are copied exactly from nature.

Conventional, in which the objects are simplified and arranged in a regular order.

Geometrical, which is composed only of straight and curved lines.

Natural designs are not so appropriate for tooling as the conventional or geometrical forms; first, because leather is a rather unyielding material, and secondly,

because leather articles are expected to withstand hard usage. In modeled work bold, but not too elaborate or detailed, designs are most suitable. Embossing in low relief and with flowing lines makes the decoration seem a part of the leather and suggests rather than forces the design upon the attention.

### Color

Color is much used in fancy leather goods. It is produced by dyeing the skins with aniline dyes or by staining the finished article. Sprinkling, spraying, marbling, or shading also give various color effects. In tooled leather, color is often produced by using various colors of India ink. Bright color may be effectively used in certain kinds of design, especially Moorish or geometrical patterns, which are also highly ornamented with gold. A beautiful color harmony, shading from deep black to palest brown, may be produced on soft brown leathers by burning. Landscapes and other pictures may be painted on leather. This painting is usually done in very subdued tones which blend with the brown background. The crackled effect usually seen in old pieces of painted leather is due to the shrinking of the skin.

For a more extended description of leather goods see manual for "Leather Goods Department."

## Chapter XII

### METAL GOODS

#### Articles

In the metal goods division of the Stationery Department are included desk sets, library sets composed of shears, paper cutter, etc., book ends, desk clocks, mantle ornaments, and paper weights. A desk set usually consists of an inkwell and pen tray, letter opener and paper cutter, calendar, blotter, stamp box, letter rack, and penwiper. To these may be added to make it more complete, a paper clip, paper weight, scales, and desk clock. Such articles, whether simple or elaborate in design and decoration, are all more or less ornamental, if in keeping with the materials of which they are made and their purposes. During each season many novelties appear, and after a season or two some of them are generally accepted so that they become staple stock.

#### Metals

Among the metals used for useful and decorative purposes are brass, bronze, copper, nickel, gold, silver,

tin, white metal, and composition. Of these, gold, silver, copper, nickel, and tin are native or found pure in nature. The rest are alloys or mixtures of two or more native metals caused to unite permanently by heat. Mixing the precious metals (gold and silver) with other metals not only makes a cheaper metal, but a more useful and durable one. Alloying cheaper metals also increases their usefulness and adds to their artistic effect. (See chapter on "Alloys" in manual for "Jewelry Department.")

Each metal has its distinguishing qualities which make it valuable in the industries and arts. The beauty and durability of gold and silver compensate for their costliness; while the color and hardness of nickel and the luster and toughness of copper give these a wide usefulness, especially in various combinations.

### Qualities

Three distinct qualities mark all metals to a greater or less degree:

1. Malleability, or capability of being beaten or shaped.
2. Ductility, or capability of being drawn out as for wire.
3. Luster or metallic brightness, which makes metals so valuable for decorative purposes.

### Gold

Gold is found free and also in connection with other minerals such as silver, mercury, and platinum. It is the most malleable and ductile of all metals and is not affected by the air. Gold leaf, which is used for decorative purposes, is beaten out to  $\frac{1}{250,000}$  of an inch in thickness. Pure gold is 24 karats fine, but gold for commercial purposes is from 14 to 18 karats pure. In the Stationery Department gold is found chiefly as decoration, but fountain pens have gold points and are often mounted in gold. (For further information on gold see the manual for "The Jewelry Department.")

### Silver

Silver occurs free, associated with native gold, or mixed with sulphur or lead. It is the most common of the "precious metals." It is very soft, though harder than gold, and so is often alloyed with copper to give it hardness. It is malleable, ductile, and unaffected by pure air, but tarnished by sulphur compounds. Sterling silver is  $92\frac{1}{2}$  per cent pure, and is valuable for its durability and luster.

Many silver articles are sold in the Stationery Department. Almost any of the fittings for a desk or library table may be made of it, and many glass sets are mounted in silver.

Sheffield plate is silver plated on copper or brass by

soldering or annealing which makes it very durable.

Dutch silver is distinguished by its artistic designs, which are usually in filigree or embossed patterns.

German silver is a combination of zinc, copper, and nickel, copper and nickel contributing the strength, and zinc and nickel the desired color effect in imitation of silver.

For further information upon silver see the manual for "The Silverware Department."

### Other Metals

*Copper* is found in larger and more widely distributed deposits than any other metal. Like gold and silver it is highly malleable, but unlike them is very tough. For this reason, as well as because of its rich color and cheapness, it is much used in alloys.

*Zinc*, though found native, is more often found in combination with other metals such as copper. Its color is bluish-white, which, together with its property of being only slightly altered by the air, makes it valuable for artificial alloys.

*Mercury*, or *quick-silver*, is an almost chemically pure metal coming out in drops from the ore cinnabar. It is liquid at the ordinary temperature, becoming so at 40° C.; it boils at 357° C. It has the power of dissolving other metals, forming alloys called amalgams.

In the Stationery Department mercury is found only in thermometers.

*Nickel* is a hard and malleable metal, not affected by dry air. It is used chiefly as a coating for other metals.

*Iron* is the most useful of all metals. It is seldom found free as it oxidizes quickly when exposed to the air and is therefore usually found in oxides. Red and yellow soils often owe their color to the presence of iron. Wrought iron is seen in the Stationery Department in many useful and ornamental forms for desk and library sets, candlesticks, and mantel ornaments.

*Steel* is a hard form of iron, made by many different processes. All cutlery is made of steel, because it can be tempered. Library shears and sometimes paper-knives are the forms of steel found in the Stationery Department.

*Aluminum* was a chemical curiosity until twenty years ago. It is light, soft, malleable, and ductile and takes a high polish. It does not tarnish nor corrode and is useful in alloys. Pen trays and other small articles in this department may be made of aluminum.

*Brass* is an alloy of zinc, copper, and nickel, in which the durability and color of copper are combined with the added advantages of the other two metals. It was probably first suggested when the natural alloys of copper and zinc were melted together.

*Bronze* is an alloy of zinc, copper, and tin.

*Art bronze* is plaster of Paris or similar material, coated with bronze.

Brass and bronze are favorite metals for desk and library furnishings.

### Color

The color and luster of metals make them suitable for decorative purposes. Their alloys may combine the characteristic colors and lusters of several metals, thus producing beautiful shades or combinations of color such as the greenish-yellow of brass or the browns and reds of bronze.

Various color effects on the same metal are produced by annealing or heating the article while in the process of shaping or decorating it.

Paint, enamel, or lacquer, used for ornamenting metal, must be applied sparingly and wisely if it is to heighten rather than lessen its artistic effect.

### Design

The metal goods found in the Stationery Department are designed especially for the writing desk or library, and care should be taken in their selection so that they may be artistic as well as useful and also that they may harmonize with the other room furnishings.

Library furnishings may be ornamental but should not be too light or fragile looking. Brass, bronze, or

wrought iron are more appropriate for library fittings than silver or Dresden china. The library is a place for comfort and restfulness, and people do not like to be careful lest some pretty ornament may be broken. Extreme or fanciful designs are also out of place in a library.

A man's den may be furnished with skulls or dancers or other pleasing figures, because he is supposed to indulge there any wandering fancy.

A lady's desk should be dainty and if possible its fittings should match the rest of the room in which it is placed, whether French, English, colonial, or modern in style.

Office furnishings should be solid, heavy, and plain, so that they may be easily kept clean.

### **Methods of Applying Design**

The shape of metal goods may be so graceful and artistic that they need no ornamentation. Designs are applied in the following ways:

1. Embossing — raising the design above the surface, usually from the back. Sometimes called repoussé.
2. Stamping — marking out a design by a machine and then smoothing and polishing it.
3. Engraving — applying a design by cutting into the article by means of a graver.

4. Etching — cutting a design by means of an acid. Filling in with enamel or other substances such as gold or bronze gives an added effect.
5. Beating or hammering — denting the surface of the article by means of a dull prong and hammer. This produces a highly artistic and soft reflection of light or metallic luster. It is often used for background effects.
6. Inlaid work — cutting out a design and filling it in with another material.
7. Cut or pierced work — cutting out a design with a fret saw and other hand tools. Book racks are sometimes seen in wood covered with pierced brass.

### Other Materials

Other materials found in the Stationery Department and usually in this division are woods (as mahogany, oak, and ebony), vulcanite or hard rubber, crystal or glass, celluloid, alabaster, onyx, amber, mother-of-pearl, and ivory. The Swiss-carved sets are notable examples of beautiful woods used for library purposes, as is also the Japanese lacquer wood.

1. *Hard rubber* is the result of extreme vulcanization of crude rubber and is a durable material capable of a high polish and varied color effects.

2. *Celluloid* is a substance made of gun cotton, cam-

phor, and other ingredients, imitating ivory or, when colored, tortoise shell, coral, amber, etc.

3. *Alabaster* is a marble-like mineral of two varieties. The gypseous or soft is of various colors — yellow, red, gray, but most valuable when pure white and soft so that it can be worked into vases, statuettes, etc. The finest quality is found in Florence, Italy. Calcareous or Oriental alabaster is the other variety.

4. *Onyx* is a variety of quartz closely related to agate. It is characterized by a structure of parallel bands of white and black, brown and red, differing in color and degree of translucency. It is used for cameos, etc.

5. *Marble* is limestone in a more or less crystalline condition. It is white, black, gray, bluish-gray, and dove-colored, less frequently red, yellow, green, and blue. The vicinity of the Mediterranean Sea is rich in marble.

6. *Enamel* is a glassy substance, white or colored, and is either transparent or opaque. It is applied as a coating to pottery and porcelain of many kinds, and also for decorative designs on metals.

7. *Ivory* is the material constituting the tusks of the elephant, walrus, and other animals. *Vegetable ivory* is the nut-like seed of a South American palm. It is as large as a hen's egg and can be cut and carved for various purposes.

8. *Mother-of-pearl* is the inner layer of the shell of various animals such as the pearl oyster. It is hard, silvery, iridescent and is the same substance as a pearl. It is found in Ceylon and the Australian Seas.

9. *Amber* is the resin of extinct pine trees found in fair abundance on the shores of the Baltic Sea where it is thrown up by the waves. It is hard, translucent, brittle, and without taste or smell except when heated.

More complete information regarding these materials and the metals may be found in the manual for the "Jewelry Department."

## Chapter XIII

### NOVELTIES, GIFTS, AND FAVORS

#### Importance of Display

The sale of most of the items coming under the list of novelties depends to a very large degree upon their proper display.

#### Gifts and Favors

Ability and willingness to assist in selecting gifts is welcomed by customers in this department. Dainty conceits and novelties are brought out so frequently that customers cannot know the stock beforehand and are grateful for suggestions as to what is suitable and satisfactory to buy. This requires both a sympathetic knowledge of the customer and her desires and a thorough acquaintance with the stock.

The selection of place cards, table decorations, and favors requires a discriminating and cultivated taste. They should, if possible, bear a relation to each other, if they are to be used for the same occasion.

#### Slow Stock

Ability to push merchandise is particularly needed

in a department so full of novelties and perishable stock and so dependent in its sales upon having a constant supply of new stock. Attractive appearance and suggestive display as well as suggestive selling will aid in accomplishing this.

### Seasonal Goods, Calendars, and Cards

The Stationery Department is a popular place in the holiday season. Calendars alone sometimes seem to require a department of their own. Although they change with every season, calendars may be grouped into five general classes:

1. Practical calendars, as engagement calendars, with little or no decoration.
2. Literary calendars, with quotations and sentiments.
3. Art calendars, designed for decorative use.
4. Odd and fanciful calendars.
5. Permanent or adjustable calendars.

To a tired and distracted customer (and nearly all customers are tired and distracted when selecting Christmas calendars), some such classification would be very helpful and save much fruitless searching. Many saleswomen have no suggestions to furnish, all calendars being just calendars to them.

Christmas cards will be sold much more quickly and

with less damage if they are kept in groups and are not allowed to become jumbled in hopeless confusion.

For all anniversaries and special occasions there are both appropriate and inappropriate cards. Some of those offered at Easter time are peculiarly out of place. Here is an excellent opportunity for the cultivation of a refined taste and a sense of fitness.

### Playing Cards

Playing cards are made of a highly glazed or supercalendered cardboard. Some cards have been made from celluloid, but they are expensive, the designs wear off, and they have not been found satisfactory.

Besides the regulation playing card deck, there are also bridge sets, 500 packs, pinochle packs, cribbage sets, and the diminutive sizes.

Poker chips are usually made of either mother-of-pearl, ivory, or a composition material.

## Chapter XIV

### STATIONERY SUPPLIES AND MISCELLANEOUS

#### Importance of These Small Articles

Miscellaneous items are the magnets of the stationery trade. Always, if properly displayed, they draw customers to a store and give greater opportunity to sell staple goods.

Great improvements have been made in such items as sanitary moisteners, letter openers, and other specialties. In fact, the improvements made in this class of goods are so many and so great that one has to be constantly on the alert so as not to be overstocked with unsalable goods.

#### Lead Pencils

The term "lead pencil" does not accurately describe a pencil. The "lead" is graphite, a mineral mined in many parts of the world. In preparing it for use in pencils it is first reduced to a pure, fine powder, and then clay of a very fine quality is added to bind it together. The greater the proportion of clay, the

harder the pencil. The proportions are very exactly worked out. Some lines are made in 15 degrees of hardness; for example, in one well-known make a No. 1 pencil, which is very soft, has 50 parts aniline, 37.5 graphite, and 12.5 clay; while the very hard No. 4 has 25 parts aniline, 25 graphite, and 50 clay.

The mixture of graphite, clay, and water is placed in heavy steel cylinders and forced through a die which forms the slender sticks for filling the pencils. After the sticks have been straightened and cut to pencil length, they are heated and tempered. They are then ready for the wooden cases. (See Frontispiece.)

### Wood Used

The wood used for good pencils is southern red cedar, because it has an even grain which whittles well. The seasoned wood is first cut into slats about the length of a pencil. The slat is then planed and grooved for the lead, the lead laid in the grooves, and another slat coated with glue fitted over it. When dried they are cut apart, sandpapered, and varnished. At this stage the pencils are really finished and ready for use.

### Finishing

Some finishing touches are usually given, however, such as stamping with the manufacturer's name and tipping with metal tip and rubber. In the better pencils

the lettering is stamped on in gold or silver leaf with hot steel dies. The metal tips are seamless, being shaped from sheet brass or bronze. The pieces from which the tips are made are drawn or stretched and fitted onto the pencil.

### **Special Kinds of Pencils**

There are hundreds of styles of pencils, such as dainty program pencils for tally and dance cards; broad, flat carpenter's pencils; skin-marking pencils for surgeons; etc.

Indelible pencils are made of 8 parts clay, 2 parts manganese dioxide, finely powdered, and 3 parts silver nitrate, mixed and kneaded with 5 parts distilled water.

Colored pencils are made by adding the different coloring matters to a base of starch, sugar, or wax.

### **Pens — History**

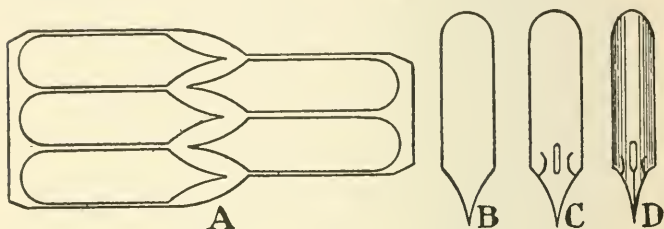
The first metallic pen was made in 1780. This is a comparatively recent date when the long ages during which men have been writing are considered. The quill pen was the immediate forerunner of the metallic pen, being used as late as 1865 and holding sway for generations, even centuries. They were made from the feathers of geese, swans, and crows. A reed pen was used before the quill.

James Perry, in 1824, started the manufacture of

pens on a large scale in England and was the first to manufacture separate pen points, as up to this time the pen and holder were in one piece.

### Process of Manufacturing Pens

The first step in manufacturing the pen is to cut the sheets of steel, which come in very large sizes, into strips about 19 inches long and wide enough to cut two



A—Scrap of Rolled Steel after Pens Have Been Cut Out. B—Blank Pen.  
C—Pen after Piercing and Side Cutting. D—Finished Pen.

Figure 7. Steel Pen in Different Stages of Manufacture

pens with points interlapping. These strips are heated gradually, cooled, and then flattened in a rolling mill to .009 of an inch in thickness. The imperfect, cheap pens have little rolling. The pens are cut out of these strips by presses, and one operator can cut 40,000 to 45,000 in a day. There are about 200 styles.

The flexibility of the pen is determined by the piercing and side cutting. In this part of the process the so-called "blanks" are heated again and while soft

are marked and shaped by a screw press. They are then hardened or tempered by dropping into cold oil many times. They are dried in sawdust, which makes the pens brittle. Resiliency, by which is meant the property of being stiff and at the same time elastic, is obtained by gradually reheating until this desired property is the result. A coating of oxide, left on the pen, is removed by scouring in revolving barrels. The pens are ground on emery "bobs" to make them hold the ink better. The slit is put in by a delicate machine and the point ground smooth. If they are to be left gray, they are polished, or they may be bronzed, blued, or blacked by heat. In these cases they are quickly chilled to prevent change in color. They may be lacquered to prevent rust, or plated with bronze, silver, or gold. (See Figure 7.)

The pens are counted by weight, arranged in parallel lines in boxes by shaking in a cylinder; then they are labeled and packed. During its process of manufacture a pen has from 20 to 28 handlings.

### Other Metals Used for Pens

Other metals such as silver, zinc, German silver, aluminum, and bronze, have been tried for pens, but steel has the most desirable qualities. It has one great disadvantage, however, it rusts.

Gold does not corrode or oxidize. The gold used in

gold pen points is an alloy of gold, silver, and copper, 14 karats being the standard for fountain pen points. Gold pens are usually tipped with iridium to protect the point. Iridium is the hardest metal known, being second to the diamond, and three times as hard as the ruby. Before the discovery of iridium, diamonds or rubies were used for this purpose. The placing of the tiny ball of iridium on the gold pen point is a very delicate operation.

### Fountain Pens

The component parts of the fountain pen are, the cap, which fits over the pen protecting it; the barrel, which holds the ink; the point section, which holds the pen and screws into the barrel; the "spoon feed," which provides the pen with a steady flow of ink; and the pen point.

### Materials

The material from which the greater part of the fountain pen is made is hard rubber. Crude rubber is the juice of a South American tree. The trees are tapped and the juice which flows is collected, washed, ground, and then dried for several months. It is finally vulcanized, which is a process of mixing sulphur and white lead with crude rubber and heating it to 300° F. for about fourteen hours. The greater

the amount of sulphur and the higher the temperature, the harder and more resistant will the rubber be. The rubber must be hard enough not to be bent out of shape and yet have enough resiliency so that the joints will be ink-tight.

After molding, each part of the pen is turned by hand on machinery. The parts are polished by wheels, ashes, and pumice stone to remove tool marks, and are then tested for leakage.

The pen point itself is made of gold, protected by iridium.

### Set of Fountain Pens

Every shape or grade of pen point requires a different set, so that it will feed freely and evenly. For



Courtesy of L. E. Waterman Co.

Figure 8. Cross Section of a Fountain Pen

example, a stub must have less resiliency than a fine point so that it will feed ink more freely.

The desired set is accomplished by hand and by feeling rather than sight. (See Figure 8.)

### Ornamentation

The barrels and caps of the ordinary fountain

pen are either plain or chased. Chasing is done in the molding process. The design having been cut in the mold, leaves its impression on the rubber. The more expensive pens are often ornamented with silver or gold or inlaid with mother-of-pearl.

### Forms of Fountain Pens

The stylographic pen is a variety of fountain pen in which a needle at the end of the pen serves as a valve to release the ink when the point is pressed on the paper.

Non-leakable or safety fountain pens are of two varieties. In one type the pen is drawn down into the barrel and the cap, having an inside plate, fits securely over the open top. The other type has a rigid pen point, but the cap screws down upon the barrel so tightly that no ink can escape.

Self-filling pens are those in which the pen is placed point down in the ink bottle and the ink is drawn up into the barrel without the use of a filler. The principle of the action is the same as when a filler is used. A slight pressure on the soft rubber ink holder inside the barrel expels the air, and when the pressure is released the ink draws up into the empty holder.

### Ink

Ink may be either a solution of any colored dye stuff, or, as in the case of common black ink, a finely divided insoluble substance mixed with water. A permanent

and penetrating ink is made from gall nuts and sulphate of iron, with perhaps the addition of aniline black.

The chief materials used for making inks are gall nuts, green vitriol, and gum, in varied proportions. The gall nuts are crushed to a powder and boiled, and the gum and green vitriol added. In cheaper inks logwood, a dark dye made from the wood of the logwood tree, may be used instead of gall nuts, but logwood inks tend to produce black flakes upon exposure to air.

### **Requirements of a Good Ink**

A good black ink must flow readily from the pen and yield at once or in a short time a deep black, permanent color. It must not corrode metallic pens, nor destroy the paper. It should not have sediment if kept in air-tight bottles, nor yield to water or absolute alcohol. It is of interest to know that the State of Massachusetts has an official ink. Up to 1850 most inks were good, but carelessness in the choice of ink resulted in illegible state records. After this the inks employed had to stand a test of the action of the sun's rays, wind, rain, and frost for six months on paper soaked with water and alcohol.

### **Special Kinds of Inks**

*Aniline* inks are made of aniline dissolved in strong alcohol diluted with distilled water and mixed with a

solution of powdered gum arabic. Aniline black inks are cheap and not permanent.

*Arnold's writing fluid* is a mixture of sulphate of indigo and ordinary ink. It flows freely from the pen, becoming permanently very black.

*Blue black inks* are made of galls and iron, with blue coloring matter (Prussian blue, indigo or an aniline blue) added.

*Colored inks* (red, blue, violet, and green) are in most cases solutions of dyestuffs, and very few are permanent. Red ink is a solution of brazilwood, cochineal, magenta, or eosine.

*Fountain pen ink* consists of tannic acid, gallic acid, and water. Ordinary writing fluid is not clean enough and clogs the pen.

*India ink* is colored by finely divided carbon, which is unaffected by chemical reagents, and is therefore permanent. It is high priced and is used for drawing.

*Indelible ink* is usually made from a salt of silver. It is used for marking clothing which is to be laundered.

*Ink eradicators* are made of hydrochloric or oxalic acid and javelle water. When used upon goods, the cloth should be rinsed quickly and thoroughly.

*Ink erasers* are made of rubber mixed with ground glass.

## Glue

This is made chiefly from gelatin obtained from

cuttings of hides, skins, tendons, and other refuse parts of animals. These are first soaked in lime, washed, and then boiled. The liquid is run off and clarified with powdered alum. Before cooling, it is drawn off in molds. Good glue should be light brown in color and semitransparent. It loses its strength by frequent remelting.

### **Mucilage**

The best quality of mucilage is made by dissolving clear glue in equal volumes of water and strong vinegar, one-fourth of an equal volume of alcohol, and a little alum. The vinegar prevents the glue from gelatinizing as it cools. Some of the preparations are merely boiled starch or flour, with nitric acid to prevent gelatinizing. Stick mucilage is made of gum arabic water, clove oil, and powdered gum dextrin to thicken.

### **Paste**

Office paste is usually a mixture of soluble starch and glue, with a little alum and oil of cloves for a preservative.

### **Sealing Wax**

The various qualities of sealing wax range between extra superfine and common. In the best qualities the chief ingredient is pale shellac mixed with turpentine, resin, and a coloring matter; in the cheaper grades resin is used in place of shellac. Red waxes are colored

with vermilion or red lead, black with lampblack, and brown with iron ochres, a brownish mineral. Too much coloring matter makes it less adhesive.

A good sealing wax is glossy and breaks with an even fracture, showing no holes or stripes. If too brittle it shows too much resin in the mixture. It should not run in thin drops but should soften on being heated and should not harden too rapidly. It should take a clean, sharp impression.

### Rulers

Rulers come in either 12 or 15 inch lengths, and may be marked in inches only, or in inches on one side and millimeters on the other. The better rulers are edged with a brass plate to preserve a sharp ruling edge more permanent than the softer wooden edge. A 15 inch ruler is a valuable aid in the department for use in measuring paper etc.

### Erasers

Rubber erasers are made by mixing washed crude rubber, sulphur, and other materials, and vulcanizing the mixture in molds. The various pigments used to color rubber goods are added to the mixture to give the desired color (carbon for black, vermilion for red, and sulphite of cadmium for yellow).

Ink erasers differ from the pencil in having more grit (such as ground glass) added to the mixture.

## Rubber Bands

There are two kinds of rubber bands — those which are a complete circle of rubber, sliced from the end of a rubber tubing, and those made from rubber thread with the ends cemented together. Both kinds are made from a vulcanized rubber mixture.

*Rubber tubing* is formed by vulcanizing the mixture over a cylinder or mandrel of the desired size. Finely adjusted machinery cuts the bands according to the desired width. This process produces a very strong band.

*Rubber thread* is washed rubber mixed with sulphur and naphtha, then pressed on cloth by rollers. French chalk is dusted on the rubber to prevent adhesion. It is then taken from the cloth, wound around a cloth-covered cylinder, and vulcanized; it is then removed from the cylinder, pasted over with shellac, and wound around a roller and dried. While still on the roller the threads are cut the required width by a rapidly revolving circular knife which is kept very wet to prevent sticking. Rubber goods should not be kept in stock too long as they deteriorate rapidly.

## Seals

Seals are metal dies with the crest, monogram, or initial of the owner incised upon them. They are used for “sealing” letters by stamping this impression on

hot sealing wax dropped on the edge of the envelope flap.

The seal is of very ancient origin and was used in many ways to protect property or documents. All important legal papers have seals attached to represent the proper authority.

### **Labels**

In recent years there has been a great increase in the numbers and varieties of tags, stickers, and labels. They are made for almost every conceivable use, for mailing purposes, for marking household goods, such as jars, bottles, boxes, books, etc. The fancy lines of these goods have come to occupy a prominent place in the holiday displays and it may sometimes require the time of one salesperson to handle the goods.

### **Paper Sets**

Paper sets, including napkins, tablecloths, and doilies, are also made in a great variety of pretty designs.

### **Twines and Cords**

The twines and cords sold in the Stationery Department are usually the lighter cords. They are made of cotton, hemp, jute, flax, and other textile fibers. They are from three to twelve ply, and run in sizes from 12 (fine) to 48 (coarse). The strength of the cord depends upon the material used and the twist.

## Chapter XV

### SELLING SUGGESTIONS

#### For Correspondence Papers

The attention of customers who wish a good correspondence paper may be called to the fact that ink does not spread so easily on linen paper, which has a harder surface and so is less inclined to blot.

Customers who object to the high cost of delicately tinted papers should know that this is due to the fact that they are more difficult to prepare.

A salesperson should call attention to the effect of artificial light on colors and, if necessary, have the paper carried to daylight for inspection.

Customers who desire a fine grade of stationery will be interested in knowing that loft-dried or pole-dried paper is dried by the air alone without the aid of artificial heat and that this makes it stronger and more elastic.

It is a good plan to try to sell some men's and children's stationery to each customer.

It is always well to ask a customer whether she wishes paper by the box or pound.

The sample books commonly used in the Stationery Department are :

Correspondence writing papers.

Mourning writing papers.

White visiting and business cards, and card envelopes.

Mourning visiting and mourning card envelopes.

Dinner, menu, and escort cards.

Sympathy acknowledgment cards.

Birth announcements, party invitations, congratulations, and removal cards.

Paper should always be shown from the sample book which must be carefully kept. The cover should be blackened when it becomes gray and the paper cleaned with sponge rubber. The salesperson should always turn the leaves herself. This is not only a mark of courtesy, but prevents the book from becoming soiled and damaged. The book should not be bent, as the samples will come off. In replacing samples they should be pasted on neatly, using not too much glue.

Paper should be a little smaller than the envelopes with which it is matched. If the exact size is not at hand, the envelope chosen should be a little too large rather than too small.

The material used for black borders on stationery will rub, so paper or envelopes which are black-bordered should be carefully wrapped.

In selling blotting paper for desk pads, it is better to sell more than one sheet, as it is easier to send it.

Letters for foreign countries are usually written on thin paper to lessen the cost of postage. When selling thin paper it is well to suggest envelopes having a lining which prevents the writing from showing.

### **For Engraving**

In accepting orders for additional engraving on old plates, there are two things to be remembered:

1. The salesperson should not guarantee new work to match the old, because no two engravers produce exactly the same work.
2. The salesperson should be sure that the metal is large enough to receive additional engraving.

Failure to mention these two dangers often results in a dissatisfied customer.

When an order for wedding invitations and announcements is received, the salesperson may profitably suggest other stationery needs for the occasion, such as new visiting cards, monogram and addressed stationery for the bride, menus, place cards, and decorations for the luncheon or breakfast, cake boxes, etc.

A book of etiquette or correct social usage is a necessary possession of the Stationery Department.

### **For Novelties and Supplies**

Leather goods should be displayed attractively in

handsome show cases, and the salesperson must see that the articles are kept clean and rearranged occasionally. The stock should be carefully watched so as to avoid being out of staple numbers.

Book racks are not ordinarily included in desk or writing sets, and it is well to suggest to a customer who has purchased a set that a book rack would be a fitting accompaniment.

The salesperson may not always have the stock to carry out ideals of "fitness" in matching favors, table or other decorations and the customer may have decided ideas of her own, but a knowledge of the appropriate thing is of the greatest value in making satisfied customers.

Often customers can be interested in favors and invitations by showing them the sample book while they are waiting for packages or change.

It is well to ask a customer what is the prevailing color in her dining room and what flowers she intends to use. This information will suggest appropriate colors and designs in cards and may sometimes give opportunity for originality in the plan of decoration.

The salesperson should be familiar with the general requirements of the various games, so as to be able to advise customers. It is wise to have on hand a book of instructions, such as Hoyle, to which to refer cus-

tomers who may ask about the technicalities of certain games.

The tassels of tally cards are very easily tangled and care should be exercised in taking them from and returning to the boxes.

The salesperson should be familiar with the general character of the other games kept in the department, and be able to advise as to those which are suitable for children, etc. This information can be obtained from the rules in the boxes.

Selling points on pencils are the uniformity and toughness of lead and the even grain of the wood, which make it possible to sharpen a pencil easily and neatly.

A thorough understanding of the action of a fountain pen is necessary for expert salesmanship.

It is always a good plan to tie the brush to the mucilage bottle to insure no omission.

Sealing wax is easily broken and so should be carefully handled and wrapped in plenty of tissue paper before sending to customers.

Novelties make up a large part of the stock of a modern Stationery Department. Because of their seasonal character the salesperson has an opportunity for suggestive selling and may assist customers in making wise selections.

## Chapter XVI

### CLASSIFICATION OF STOCK OF STATION- ERY DEPARTMENT

#### DIVISIONS

- A. Paper
- B. Engraving
- C. Leather Goods
- D. Metal Goods
- E. Novelties, Gifts, and Favors
- F. Stationery Supplies and Miscellaneous

#### A — PAPER

##### *I. Correspondence Paper*

- 1. Forms
  - Box Paper and Cards
  - Pound Paper and Separate Envelopes
- 2. Materials
  - Linen
  - Mixed Rags
  - Wood Pulp
- 3. Sizes
  - Letter
  - Note
  - Small Note

4. Finish
  - Rough (Vellum, Antique)
  - Smooth (Supercalendered, Plate)
  - Novelty or Fabric (Linen, Madras, etc.)
5. Color
  - White
  - Gray
  - Blue
  - Lavender
  - Buff
  - Brown
  - Green
  - Purple
  - Two-Toned
  - Black-Bordered
  - Checked and Other Novelties
  - Combinations
    - White with Colored Linings
    - White with Colored Borders

## *II. Commercial*

1. Stationery
  - Letterheads and Envelopes
  - Legal Cap
  - Foolscap
2. Typewriting Supplies
  - Paper
  - Carbon, etc.
  - Tissue
3. Pads and Note Books
4. Ledgers and Loose-Leaf Devices
5. Filing Envelopes, Cabinets, Indexes
6. School Supplies

## B — ENGRAVING

1. Kinds (or Methods)
  - Plate Printing (Engraving)
  - Type Printing
2. Styles
  - (a) Types
    - Script
    - Old English
    - Roman
    - Caxton (Plain and Shaded)
    - French (Plain and Shaded)
    - Spanish (Plain and Shaded)
  - (b) Monograms, Crests, Coats of Arms, Addresses
3. Articles
  - Letterheads
  - Cards, Invitations, Announcements

## C — LEATHER GOODS

1. Articles
  - (a) Books
    - Memorandum Books and Diaries
    - Guest Books, Albums, and Address Books
    - Receipt and Cash Books
    - Dance Lists, Laundry Lists, etc.
  - (b) Desk Sets
  - (c) Pads (Writing, Desk, Score, etc.)
  - (d) Lists (Telephone, Calling, Laundry)
  - (e) Boxes (Stamps, Sewing)
  - (f) Clock Cases
  - (g) Book Covers
2. Material and Finish
  - Russia, Morocco, Levant

Calf, Pig, Sole  
Alligator, Walrus, Seal  
Chamois, Vellum  
Imitation Leathers

D — METAL GOODS

1. Articles

Sets (Desk, Library)  
Book Ends  
Clocks  
Ornaments

2. Materials

(a) Metals

Silver  
Copper  
Tin  
Brass, Bronze  
Nickel  
Composition

(b) Woods (Mahogany, Ebony, Oak)

(c) Hard Rubber

(d) Glass

(e) Onyx, Ivory, Celluloid, Mother-of-Pearl,  
Amber

E — NOVELTIES, GIFTS, AND FAVORS

1. Favors

2. Seasonal Goods

Cards  
Calendars

3. Playing Cards and Other Games

Score Pads  
Tallies

## F — STATIONERY SUPPLIES AND MISCELLANEOUS

- Pencils
- Pens and Penholders
- Fountain Pens
- Ink
- Glue
- Mucilage
- Paste
- Sealing Wax
- Rulers
- Erasers
- Rubber Bands
- Seals
- Labels
- Paper Sets
- Twines and Cords
- Handy Boxes

## Appendix

### MANUFACTURERS OF WRITING PAPER

Ætna Paper Co.	Dayton, Ohio
American Writing Paper Co.	Holyoke, Mass.
Beckett Paper Co.	Hamilton, Ohio
Berkshire Hills Paper Co.	Adams, Mass.
Brown, L. L., Paper Co.	Adams, Mass.
Carew Mfg. Co.	So. Hadley Falls, Mass.
Chapin & Gould Paper Co.	Springfield, Mass.
Chemical Paper Mfg. Co.	Holyoke, Mass.
Crane, Z. & W. M.	Dalton, Mass.
Crane & Co.	Dalton, Mass.
Crocker-McElwain Co.	Holyoke, Mass.
Dexter, C. H., & Sons.	Windsor Locks, Conn.
Eastern Mfg. Co.	Bangor, Me.
Esleeck Mfg. Co.	Turners Falls, Mass.
Fox River Paper Co.	Appleton, Wis.
Gilbert Paper Co.	Menasha, Wis.
Hammermill Paper Co.	Erie, Pa.
Hampshire Paper Co.	So. Hadley Falls, Mass.
Hawthorne Paper Co.	Kalamazoo, Mich.
Henry Paper Co.	Lincoln, N. H.
Howard Paper Co.	Urbana, Ohio
Keith Paper Co.	Turners Falls, Mass.
Kimberly-Clark Co.	Nenah, Wis.
Lakeside Paper Co.	Nenah, Wis.
Lee Paper Co.	Vicksburg, Mich.
Marathon Paper Mills Co.	Wausaw, Wis.
Millers Falls Paper Co.	Millers Falls, Mass.
Mountain Mill Paper Co.	Lee, Mass.
Munising Paper Co.	Munising, Mich.

Neenah Paper Co.	Neenah, Wis.
Odell Mfg. Co.	New York City
Old Berkshire Mills Co.	Dalton, Mass.
Parsons Paper Co.	Holyoke, Mass.
Poland Paper Co.	Portland, Me.
Rising, B. D., Paper Co.	Housatonic, Mass.
Riverside Fibre & Paper Co.	Appleton, Wis.
Southworth Co.	Mittineague, Mass.
Strathmore Paper Co.	Mittineague, Mass.
Taylor-Logan Co.	Holyoke, Mass.
Valley Paper Co.	Holyoke, Mass.
Weston, Byron, Co.	Dalton, Mass.
Wheat Paper Co.	Elkhart, Ind.
Whiting, Geo. A., Paper Co.	Menasha, Wis.
Whiting Paper Co.	Holyoke, Mass.
Whiting-Plover Paper Co.	Stevens Point, Wis.
Worthy Paper Co. Association	Mittineague, Mass.

## MANUFACTURERS OF FINE STATIONERY

American Papeterie Co.	Albany, N. Y.
Bainbridge, Charles T., Sons	Brooklyn, N. Y.
Berlin & Jones Co.	New York City
Birnie Paper Co.	Springfield, Mass.
Coyle & Gilmore Co.	New York City
Crane, Z. & W. M.	Dalton, Mass.
Eaton, Crane & Pike Co.	Pittsfield, Mass.
Hurd, George B., & Co.	New York City
Kalamazoo Stationery Co.	Kalamazoo, Mich.
Morgan Envelope Co.	
Division	Springfield, Mass.
Murphy, John A., Co.	Springfield, Mass.
National Papeterie Co.	Springfield, Mass.
Powers Paper Co.	Springfield, Mass.
Taylor-Atkins Paper Co.	Burnside, Conn.
Ward, Marcus, Co.	Brooklyn, N. Y.
Ward, Samuel, Co.	Boston, Mass.

Weyand, Charles E. & Co.	New York City
White & Wyckoff Mfg. Co.	Holyoke, Mass.
Whitney Mfg. Co.	Worcester, Mass.
Whiting & Cook Co.	Holyoke, Mass.
Whiting Paper Co.	New York City

## BOOKS FOR REFERENCE

- Paper Technology, R. W. Sindall. Lippincott, \$4  
 The Manufacture of Paper, R. W. Sindall. VanNostrand, \$2  
 Manufacture of Paper, C. T. Davis. Baird, \$6  
 Practical Paper Making, G. Clapperton. VanNostrand, \$2.50  
 Paper and Paper Making, Herring  
 The Story of Paper Making, F. O. Butler. J. W. Butler  
     Paper Co., 75 cents  
 Chapters on Paper Making, Clayton Beadle. VanNostrand,  
     \$2  
 The Art of Paper Making, A. Watt. VanNostrand, \$3  
 Paper and Its Uses, Dawe. Crosby Lockwood & Sons (Lon-  
     don)  
 Wood Pulp and Its Uses, Cross, Bevan, and Sindall. Van-  
     Nostrand, \$2  
 Outlines of Stationery Testing, Bromley  
 Treatment of Paper for Special Purposes, L. E. Andés. Van-  
     Nostrand, \$2.50  
 The Paper Trade, A. Dykes Spicer  
 Commerce and Industry, J. Russel Smith. Holt, \$1.40  
 Industrial Chemistry, Rogers Benson. Macmillan, \$1.90  
 Scientific American Cyclopædia  
 Forty Centuries of Ink, D. N. Carvalho. Banks, \$3.50  
 From Out of the Ashes. Dempsey and Carroll  
 Work, *American Stationer*





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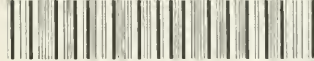
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